

The Library
of the
University of North Carolina



Collection of North Caroliniana

This book was presented

by
The Department

C387

N87c

[4]

UNIVERSITY OF N.C. AT CHAPEL HILL



00045076594

**This book must not
be taken from the
Library building.**



Digitized by the Internet Archive
in 2013

<http://archive.org/details/hydrologicdatase04nort>

NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
GEORGE R. ROSS, DIRECTOR

DIVISION OF WATER RESOURCES AND ENGINEERING
W.H. RILEY, PRINCIPAL ENGINEER

HYDROLOGIC DATA
ON THE
CATAWBA AND BROAD RIVER BASINS
1872-1945



PREPARED IN COOPERATION WITH
UNITED STATES GEOLOGICAL SURVEY
AND UNITED STATES WEATHER BUREAU
1949

CONTENTS

54-1
N87c
513610

	Page
Foreword.....	1
Acknowledgment.....	2
Description of Water Shed.....	3
Stream Flow.....	3
Stream Gaging Stations	
Catawba River at Marion, N. C.....	9
Catawba River at Catawba, N. C.....	12
Linville River at Branch, N. C.....	21
Henry Fork near Henry Fork, N. C.....	26
South Fork Catawba River at Lowell, N. C.....	29
Little Sugar Creek near Charlotte, N. C.....	32
Broad River near Chimney Rock, N. C.....	37
Broad River near Boiling Springs, N. C.....	42
Green River near Mill Spring, N. C.....	47
Second Broad River at Cliffside, N. C.....	52
First Broad River near Lawndale, N. C.....	57
Catawba River Miscellaneous Measurements.....	60
Reservoirs	
Bridgewater Reservoir near Bridgewater, N. C.....	16
Rhodhiss Reservoir at Rhodhiss, N. C.....	17
Oxford Reservoir near Taylorsville, N. C.....	18
Lookout Shoals Reservoir near Catawba, N. C.....	19
Mountain Island Reservoir near Mt. Holly, N. C.....	20
Lake Summit Reservoir at Tuxedo, N. C.....	50
Turner Shoals Reservoir near Mill Spring, N. C.....	51
Climatological.....	67
Charlotte, N. C.....	72
Lenoir, N. C.....	79
Marion, N. C.....	85
Morganton, N. C.....	91
Tryon, N. C.....	96
Quality of Water.....	100
Chemical Analyses	
Miscellaneous.....	101
Public Water Supplies.....	102
Ground Water	
Introduction.....	103
Occurrence of ground water.....	106
Fluctuations of the water table.....	106

Contents (Continued)

	Page
Geology and ground-water resources.....	106
Factors affecting yield of wells.....	107
Quality of water.....	108
Water-bearing character of the rocks.....	108
Biotite gneiss and schist.....	108
Schist.....	109
Hornblendic rocks.....	109
Slate and associated rocks of volcanic origin.....	110
Slate and quartzite.....	110
Granite.....	111
Public ground-water supplies.....	111
Analyses of water from wells in the Catawba and Broad River Basins...	114
Records of wells in the Catawba and Broad River Basins.....	116

Maps and Charts

Map of Catawba and Broad River Basins showing Physiographic Regions.....	4
Condensed Profiles of Catawba and Broad Rivers in North Carolina.....	5
Stream Gaging Stations in the Catawba and Broad River Basins showing Records Available.....	6
Map of Catawba and Broad River Basins showing Stream Gaging Stations.....	7
Rainfall Stations in Catawba and Broad River Basins showing Records Available.....	68
Map of Catawba and Broad River Basins showing Mean Annual Rainfall Isohyetals.....	69
Temperature Stations in Catawba and Broad River Basins showing Records Available.....	70
Map of Catawba and Broad River Basins showing Mean Annual Temperature Isotherms.....	71
Map of North Carolina showing where ground-water investigations have been made (Figure 1).....	104
Map of Catawba and Broad River Basins showing the geology and municipal ground-water supplies (Figure 2).....	105

FOREWORD

This is the fourth of a series of publications giving hydrologic data in the State of North Carolina. Previous publications have been released under the titles of "Hydrologic Data on the Neuse River Basin," "Hydrologic Data on the Cape Fear River Basin" and "Hydrologic Data on the Yadkin-Pee Dee River Basin". It is planned to issue similar publications on each of the river basins of the State.

The purpose of this publication is not to supply all the hydrologic information collected in the Catawba and Broad River Basins, but to make available under one cover the information that can be readily used. Records at several Weather Bureau stations as well as at several stream flow stations are omitted as they would make the publication unnecessarily bulky and might be misleading to those that are not working with such data constantly. Full information on these stations can be obtained from the Division of Water Resources and Engineering of the Department of Conservation and Development, Raleigh, North Carolina, and its cooperating agency the U. S. Geological Survey, Raleigh, North Carolina. Complete climatological data can be obtained from the U. S. Weather Bureau, Raleigh, North Carolina.

Records of stream flow in this report has been compiled from records of the Water Resources Branch of the U. S. Geological Survey. Some of these are revised records and have not yet been published in the water-supply papers of the U. S. Geological Survey. Differences may be found between figures published in this report and those contained in official publications of the U. S. Geological Survey. The records presented herein are believed to be the latest revised figures. In such cases the matter should be checked with the district office of the Water Resources Branch, U. S. Geological Survey, Raleigh, North Carolina.

Water is one of the greatest natural resources in the Catawba and Broad River Basins. No other resource is more abundant or can serve the public in more beneficial ways, yet no other resource is subject to as much misuse. With wise planning and control, water can be made man's best servant; without wise planning and control, water can be man's greatest enemy. Every drop of water that passes to the sea is a loss to the public unless it has given up its full usefulness. By better planning the uses of this great resource, it can be made to serve a larger number of people to better advantage and pay larger dividends to the whole state.

Large industries, power plants, and other large users of water have now taken practically all of the locations where there is no question as to the amount of water being adequate for their uses. Today smaller water-sheds are being developed, and without records it is difficult to estimate the dependable flow with any degree of certainty. It is useless to think that industry will make a large investment at any site unless it can be assured of having sufficient water of suitable quality to meet its demands at all times.

Industry is one of the mainstays of our civilization. It provides employment for the citizens of a community and helps support the city, county, and State governments. Water is required by most industries either to furnish power or in the processing of raw materials. Requirements for supplies of water adequate in both quantity and quality are rigid. Since most industries must operate during all periods of the year and some of the elements present in the water may damage the final product, all data possible on the supplies of water should be readily available for use. As industries grow in the State some will need to expand their present plants, others will need to build plants, and still others may need to

change from ground water to surface water. In all of these instances the information in this publication will be found very useful.

Weather conditions often have their effects upon industries and may be the deciding factor in their location. Although the records of only five Weather Bureau stations appear in this publication, they are believed to be representative of general conditions throughout the whole basin.

Quality of water is playing a large part every day in the selection of water supplies for industrial and domestic use. Certain constituents can be very harmful to the final products of a great number of manufacturers and may be costly to remove. Many industries are greatly benefited in selecting their locations where information is available on the quality of water. The Catawba and Broad Rivers and their tributaries have water suitable for the manufacturing of many products. Users of water will find analyses of some of the public water supplies very useful.

ACKNOWLEDGMENT

Grateful acknowledgment is made to Mr. E. B. Rice, District Engineer of the U. S. Geological Survey, for supplying information related to stream flow; to Mr. F. H. Pauszek, District Chemist of the U. S. Geological Survey, for supplying information on quality of water; to Mr. H. E. LeGrand, Assistant Geologist of the U. S. Geological Survey, for supplying information on ground water; to Mr. G. DeMots, Section Director of the U. S. Weather Bureau, for supplying information on rainfall and temperature; and to Mrs. Sallaine S. Upchurch, who has prepared the copy for the printers and assisted in assembling the data.

DESCRIPTION OF WATER SHED

The Catawba and Broad River Basins, lying in the western central portion of North Carolina, form the upper part of the Santee River Basin of South Carolina. The drainage area of the Catawba River Basin in North Carolina is 3,250 square miles, while that of the Broad River Basin is 1,450 square miles. For the purpose of this report the two basins will be considered jointly.

These basins are bordered on the east by the Yadkin River Basin, on the north by the Watauga River Basin, and on the west by the French Broad River Basin.

The combined Catawba and Broad River Basins are divided into two well defined physiographic regions; the Piedmont Plateau and the Mountain Region as shown on page 4. The Piedmont Plateau consists of a rolling terrain attaining an elevation of 1,200 feet where it blends into the foothills of the Mountain Region. This mountain region is composed of rugged foothills and mountainous reaches.

The Catawba River rises in the Blue Ridge Mountains in western North Carolina. It flows first in an easterly direction for about 80 miles, then turns abruptly and flows almost due south for about 215 miles to its junction with the Congaree River in South Carolina. It is known as the Catawba River throughout its length in North Carolina and as the Wateree River in South Carolina for the reach below its junction with the Big Wateree Creek and above its confluence with Congaree River. From the headwaters of Bridgewater Reservoir (Lake James) on the upper part of the stream to the South Carolina line the river has a total length of about 150 miles. The elevation ranges from about 1,200 feet at the head of Bridgewater Reservoir to approximately 510 feet at the South Carolina State line, making a total fall of 690 feet in 150 miles, or an average slope of 4.6 feet per mile throughout this stretch of the river. A condensed profile of the Catawba River in North Carolina, including present dams and lakes, is shown on page 5. The principal tributaries in North Carolina are Warrior Fork River, Little River, South Fork River, and Johns River.

The Broad River rises on the eastern slope of the Blue Ridge Mountains near Hickory Nut Gap at an elevation of about 4,000 feet. It flows in a general southeasterly direction to its junction with the Saluda River at Columbia, S.C. At the headwaters of Lake Lure the river has an elevation of 1,000 feet and 51 miles below, where it crosses the State line, it has an elevation of about 580 feet, making the average fall of the river about 8.2 feet per mile for this reach. The fall is concentrated at numerous shoals and rapids which afford good locations for power and storage development. A condensed profile of the Broad River in North Carolina is shown on page 5. Principal tributaries to the main stream are the Green River, First and Second Broad Rivers, and Buffalo Creek.

STREAM FLOW

The flow of the Catawba and Broad Rivers and their tributaries has been recorded by a total of 28 gaging stations. Only records that have a length of 10 years or more or were active at the end of 1945 are shown in this publication. A chart showing all stations with their period of record can be found on page 6. Records of daily discharge for all stations listed can be obtained

LEGEND

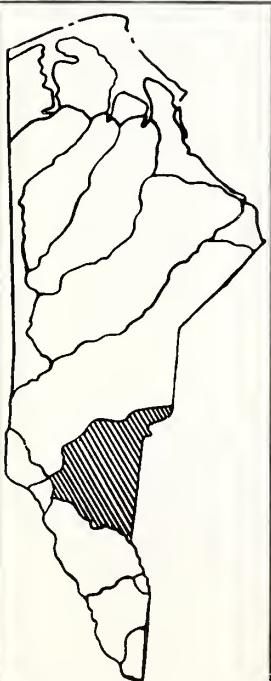
- Drainage Basin Line — · · ·
- County Line — · · ·
- Physiographic Boundary •••••

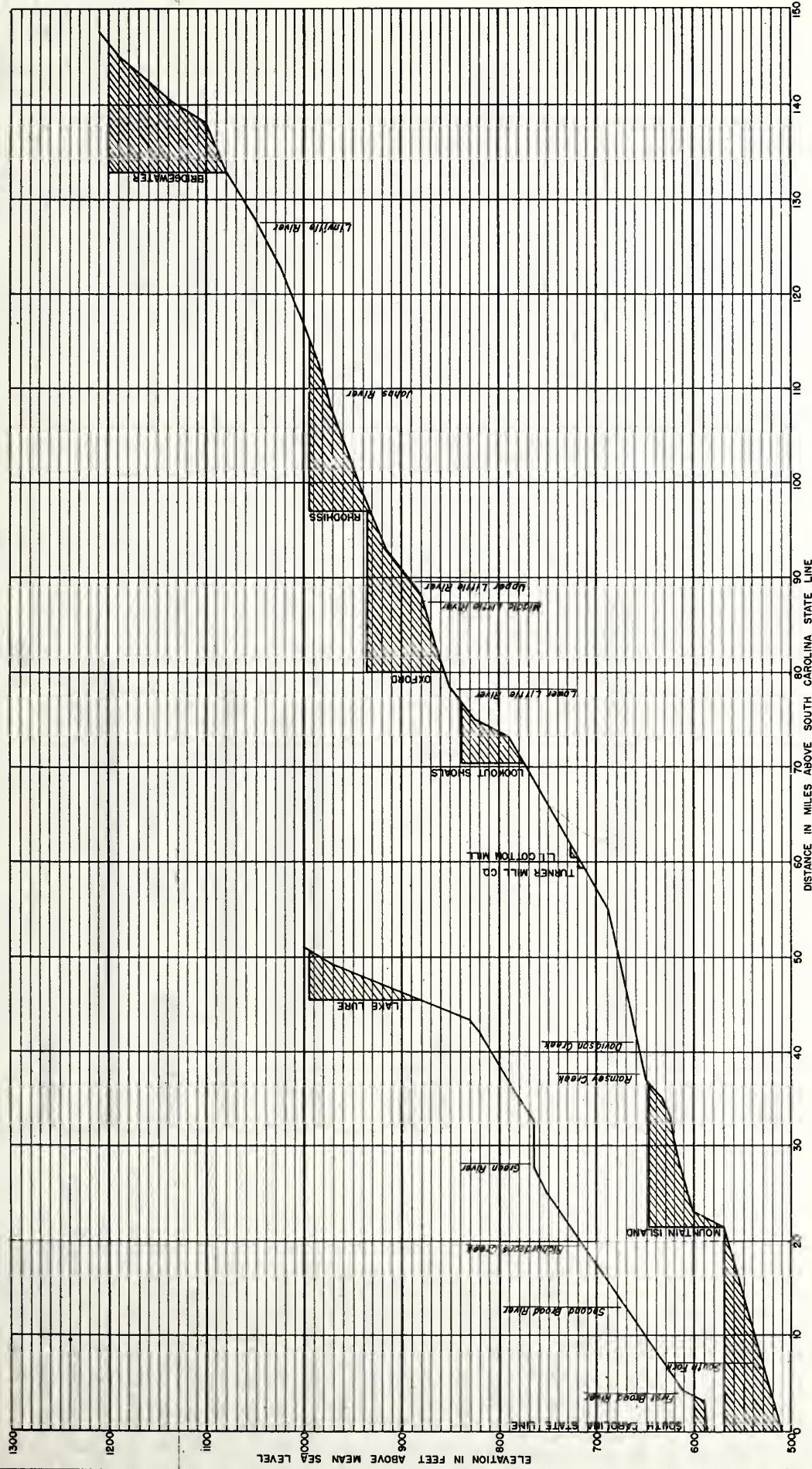
SCALE IN MILES
0 10 20



N. C. DEPT. OF CONSERVATION AND DEVELOPMENT
DIVISION OF WATER RESOURCES AND ENGINEERING

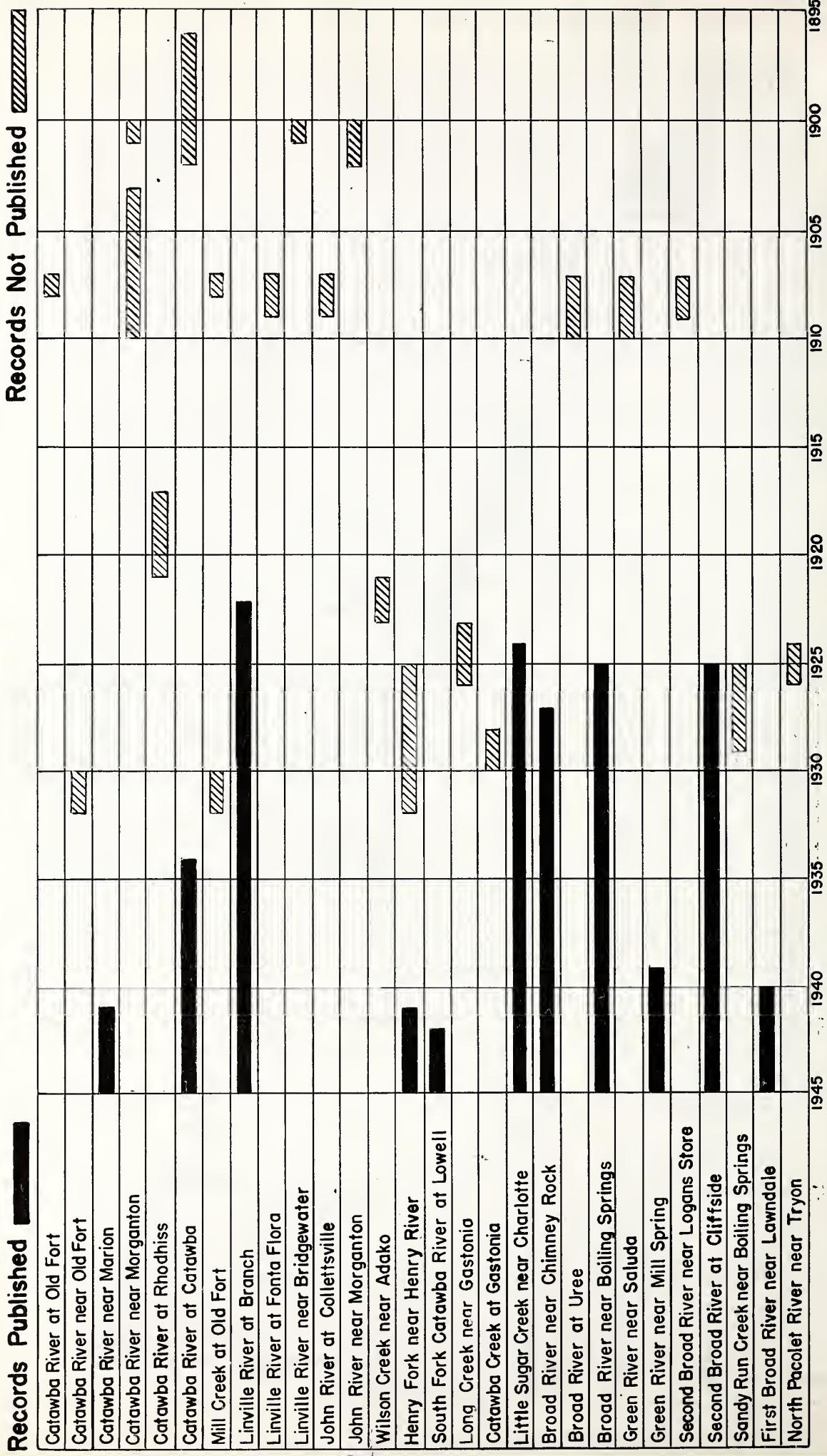
MAP OF
CATAWBA AND BROAD RIVER BASINS
SHOWING
PHYSIOGRAPHIC REGIONS





CONDENSED PROFILES
OF
CATAWBA AND BROAD RIVERS
IN
NORTH CAROLINA

**STREAM GAGING STATIONS IN THE CATAWBA AND BROAD RIVER BASINS
SHOWING RECORDS AVAILABLE**

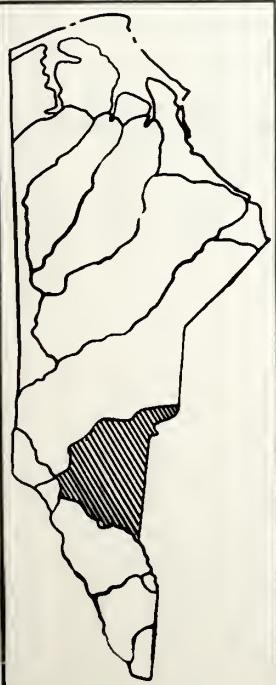
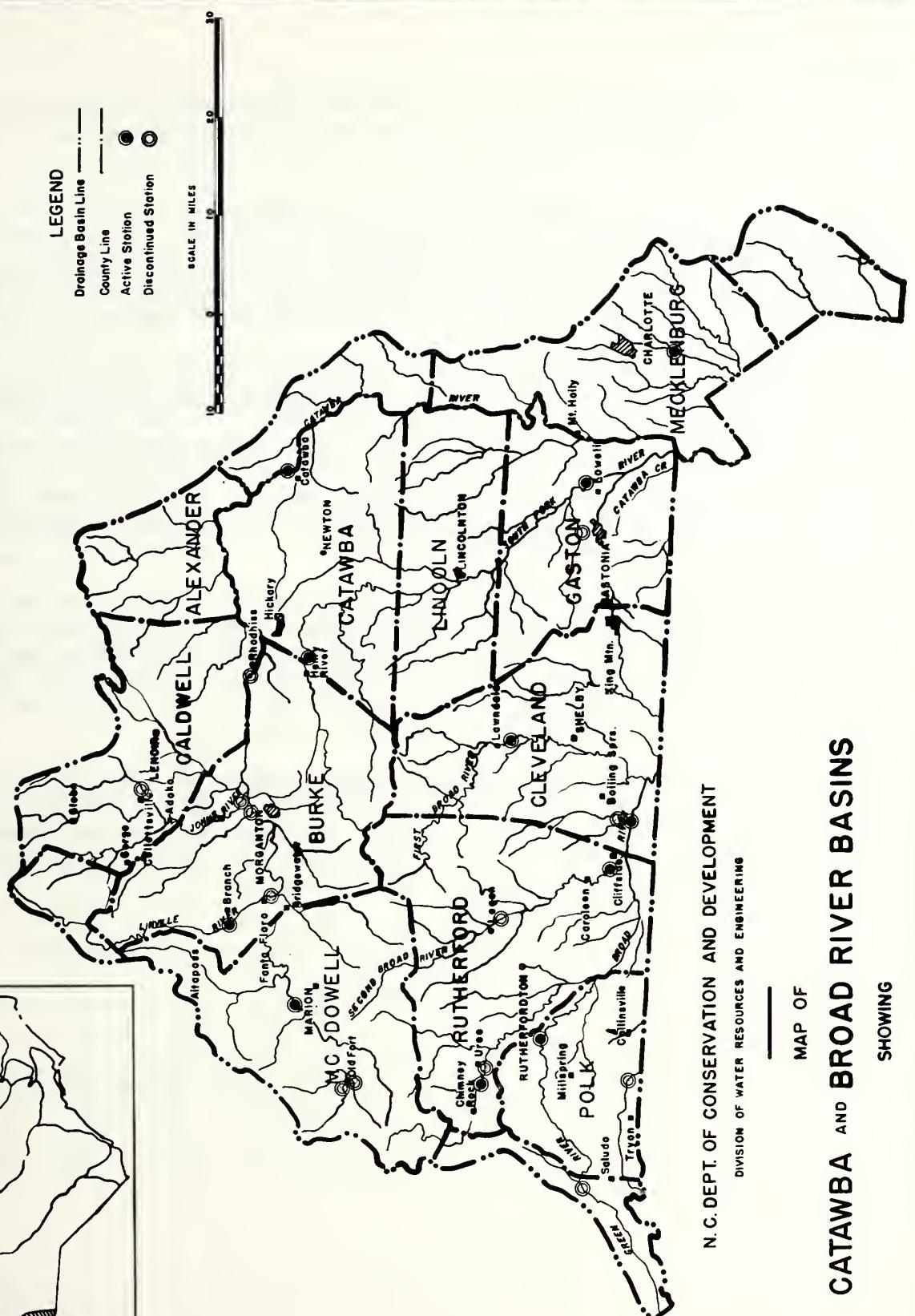


STREAM GAGING STATIONS

SHOWING

CATAWBA AND BROAD RIVER BASINS

DIVISION OF WATER RESOURCES AND ENGINEERING



from the Division of Water Resources and Engineering, Department of Conservation and Development, Raleigh, North Carolina; or from the Water Resources Branch, U. S. Geological Survey, Box 1326, Raleigh, North Carolina.

The longest record in the Catawba and Broad River Basins is that of the Linville River at Branch. This station was established June 7, 1922, as a staff gage located on a highway bridge 800 feet from Branch Post Office. On August 12, 1937, a water-stage recorder was installed and has been in operation continuously since that date. The present station is in close proximity of the original staff gage.

No attempt has been made to include daily discharge records since these are published in the water-supply papers of the U. S. Geological Survey. In place of these daily records, tables of average weekly discharge are shown. Computations of weekly discharge have been made by averaging the daily discharge for consecutive seven-day periods. When leap years intervene the extra day has been included in the eight-day period covering the last of February and the first of March. In every year one eight-day period has been used at the last of December. The seven-day periods used have been the same seven calendar days for each year.

Maximum and minimum daily discharges have been tabulated in separate tables for each month of each year of record. In another table will be found the mean monthly discharge for each year of record. These tables were set up in this form as the records were believed to be more useful when grouped together in individual tables. For example the minimum daily flow may be easily selected for the station desired by looking under the table for minimum discharge for the station.

During very dry seasons and often during floods a number of miscellaneous measurements are made at points where there are no gaging stations. These measurements are very useful in estimating the flow on the streams that have no established stream gaging stations. A tabulation of all miscellaneous measurements giving their dates and discharge will be found at the end of this section.

Catawba River near Marion, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}42'20''$, long. $82^{\circ}02'10''$, at bridge on U. S. Highway 221, a quarter of a mile downstream from Tom Creek and $2\frac{1}{4}$ miles northwest of Marion, McDowell County.

Drainage area.- 171 square miles (including area of first tributary below bridge, which enters above control).

Records available.- October 1941 to December 1945.

Extremes.- Maximum discharge, 5,300 million gallons per day, that of Sept. 18, 1945; minimum discharge, 45 million gallons per day (regulated) Dec. 17, 1943, Sept. 8-11, 1944.

Remarks.- Some diurnal fluctuation and slight regulation for short periods at low flow caused by power plants above station.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1941										58.7	84.6	180	
1942	139	233	309	156	410	245	200	231	246	136	119	287	226
1943	340	290	233	284	227	163	254	123	83.3	69.1	82.0	87.9	186
1944	145	238	353	282	178	109	122	89.8	114	155	105	138	169
1945	154	209	187	243	218	140	136	109	363	202	174	287	202
Max.	340	290	353	284	410	245	254	231	363	202	174	287	226
Min.	139	209	187	156	178	109	122	89.8	83.3	58.7	82.0	87.9	169
Mean	194	242	270	241	258	164	178	138	202	124	113	196	196

Catawba River near Marion, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1941										143	220	853	
1942	235	1070	1520	233	1890	586	808	627	659	168	155	1810	1890
1943	1340	730	437	1430	494	364	501	191	203	85	235	311	1430
1944	437	736	1190	492	250	165	272	218	1140	736	194	217	1190
1945	302	526	509	501	1010	401	253	189	2560	574	335	582	2560
Max.	1340	1070	1520	1430	1890	586	808	627	2560	736	335	1810	2560
Min.	235	526	437	233	250	165	253	189	203	85	155	217	1190
Mean	578	766	914	664	911	379	458	306	114	341	228	755	1770

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1941										45	61	61	
1942	90	120	149	115	116	145	87	147	129	116	97	130	87
1943	153	173	155	165	165	109	140	79	58	59	60	56	56
1944	84	76	163	191	132	66	70	53	45	76	76	101	45
1945	112	87	128	151	135	90	84	77	70	134	118	151	70
Max.	153	173	163	191	165	145	140	147	129	134	118	151	87
Min.	84	76	128	115	116	66	70	53	45	45	60	56	45
Mean	110	114	149	156	137	102	95	89	76	68	82	100	64

Catawba River near Marion, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1941	1942	1943	1944	1945				
Jan. 7		181	278	191	211				
14		127	185	118	151				
21		124	478	183	142				
28		120	366	107	126				
Feb. 4		139	376	89	106				
11		227	443	129	107				
18		333	256	351	236				
25		220	207	270	336				
Mar. 4		171	178	266	204				
11		567	174	265	165				
18		279	193	202	136				
25		229	332	438	149				
Apr. 1		225	262	602	300				
8		169	193	267	236				
15		177	185	245	163				
22		142	481	207	265				
29		130	294	389	311				
May 6		153	206	227	211				
13		129	267	187	167				
20		833	227	167	355				
27		586	237	160	183				
June 3		226	163	135	140				
10		244	143	144	131				
17		404	163	115	176				
24		185	136	89	145				
July 1		154	233	82	107				
8		151	344	125	134				
15		122	332	162	116				
22		106	182	129	141				
29		422	187	84	137				
Aug. 5		187	136	138	162				
12		181	147	90	99				
19		298	144	85	109				
26		296	97	63	112				
Sept. 2		201	89	66	83				
9		388	79	54	110				
16		218	69	72	227				
23		154	106	106	982				
30		218	78	238	211				
Oct. 7	47	151	71	162	257				
14	50	138	66	100	203				
21	55	129	68	224	155				
28	74	132	72	152	214				
Nov. 4	102	131	69	107	150				
11	100	127	112	93	136				
18	70	112	82	85	144				
25	75	114	70	95	249				
Dec. 2	69	127	67	169	175				
9	280	209	68	149	356				
16	125	169	65	141	236				
23	120	136	65	121	178				
31	224	622	149	133	160				
Maximum		833	481	602	982				
Minimum		106	65	54	83				

Catawba River at Catawba, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}42'50''$, long. $81^{\circ}04'10''$, 10 feet downstream from bridge on U. S. Highway 70, a quarter of a mile upstream from Lyle Creek, half a mile upstream from Southern Railway bridge, and 1 mile northeast of Catawba, Catawba County. Datum of gage is 746.49 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area.- 1,535 square miles, including that of Lyle Creek.

Records available.- July 1896 to April 1902, November 1934 to December 1945.

Average discharge.- 13 years (1896-99, 1935-45), 1560 million gallons per day.

Extremes.- Maximum discharge, 114,300 million gallons per day Aug. 14, 1940 (gage height, 36.8 feet, from floodmarks), by computation of flow at Lookout Shoals power plant by Duke Power Co.; minimum, 69 million gallons per day (regulated) Nov. 9, 1941.

Maximum stage known, 44.1 feet July 16, 1916, affected by failure of earth dike at Lookout Shoals Dam, 4 miles above station (from levels by State Bridge Department).

Remarks.- Records good except those below 646 million gallons per day, which are fair. Records include discharge of Lyle Creek. Flow regulated by four reservoirs above station which have combined usable capacity of 14,975,000,000 cubic feet.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1896													
1897	1064	4526	3642	3239	1680	1184	2885	692	704	559	1435	1388	
1898	1359	915	1466	1259	1034	854	1146	853	657	1154	797	858	1733
1899	2697	5669	8480	3987	2541	1610	2145	3257	4277	4684	1738	2043	2086
1901	2440	1944	3314	6403	5336	3461	2185	6671	2256	1680	1493	3766	3412
1935							1263	1391	1379	1796	1510	1086	
1936	2610	1776	1613	3484	1504	972	765	919	1324	2505	1966	1372	1732
1937	3985	2370	1932	1637	1490	1196	1001	824	2169	2324	1790	1793	1873
1938	1699	1801	1357	1298	1079	1161	870	1526	715	893	964	1342	1223
1939	855	2403	2459	1598	1292	1092	757	1050	935	642	758	647	1199
1940	696	753	768	1189	1286	624	720	5218	2194	988	919	963	1364
1941	1033	839	846	1231	842	685	1988	733	776	1041	774	869	974
1942	663	1342	1925	1210	2053	1502	1079	1047	1968	1162	807	1388	1345
1943	2430	2373	1514	1818	1629	1125	2345	965	667	627	762	781	1415
1944	990	1707	2091	1859	1300	771	939	771	879	1676	1206	889	1255
1945	1174	1357	1745	1118	1589	778	506	985	3043	1263	1281	1554	1364
Max.	3985	5669	8480	6403	5336	3461	2885	6671	4277	4684	1966	3766	3412
Min.	663	753	768	1118	842	624	506	692	657	559	758	647	974
Mean	1692	2127	2368	2238	1761	1215	1363	1748	1561	1493	1193	1414	1688

Catawba River at Catawba, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1896							10400	917	1910	1050	9820	6330	
1897	4170	26000	11400	26200	7120	2230	2070	1650	891	10900	1650	1200	26200
1898	6270	1110	10100	2370	2670	2670	9120	14200	34000	17700	2370	6460	34000
1899	11000	21100	39400	12700	5500	2450	2990	3490	1810	1140	995	8170	39400
1901	11100	2700	24800	-----	51400	15900	4300	26000	4260	2870	2260	29600	-----
1935							2240	2180	2160	2640	2580	2000	
1936	11200	3370	2480	10900	2310	1710	1430	1520	2560	12500	2720	2940	12500
1937	10900	4530	2800	2450	2300	1870	1570	2420	2800	12500	3140	2700	12500
1938	2690	2790	2500	2440	1840	1950	1640	2870	1330	1660	1720	2610	2870
1939	1410	5350	5450	2660	2520	1920	1300	2070	1640	975	1420	788	5450
1940	1100	1180	1380	2680	2580	1080	1180	65200	6090	1640	1680	1810	65200
1941	1720	1370	1560	2140	1290	1080	11400	1980	1380	2240	1560	1780	11400
1942	1050	3570	5100	2670	6720	2770	2420	2390	9370	2220	1410	7300	9370
1943	5890	3780	2690	3070	2650	2190	5700	1850	1150	1300	1530	1410	5890
1944	2000	3350	7300	3950	2250	1210	2240	1160	6320	3020	1980	1450	7300
1945	2050	2730	2970	2110	2490	1610	1820	1920	28800	2220	2070	3480	28800
Max.	11200	26000	39400	26200	51400	15900	11400	65200	34000	17700	9820	29600	65200
Min.	1050	1110	1380	2140	1290	1080	1180	917	891	975	995	788	2870
Mean	5182	5924	8566	5895	6689	2903	3864	8239	6654	4786	2432	5002	20068

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1896							917	497	497	497	539	685	
1897	678	1000	1000	1410	927	820	820	614	581	549	614	714	
1898	827	872	827	1020	782	646	736	1360	969	1730	1210	1110	646
1899	1550	1550	2670	2520	1680	820	950	820	782	743	820	904	743
1901	1760	1760	1840	-----	2040	1820	1470	1580	1610	1500	1290	1350	-----
1935							94	90	90	432	105	127	
1936	149	132	116	138	94	94	88	112	138	103	113	110	88
1937	245	137	116	112	110	105	103	88	116	96	114	186	88
1938	112	107	124	107	101	110	103	103	101	98	146	96	96
1939	112	218	108	107	106	94	96	96	88	90	76	74	74
1940	105	114	116	105	140	82	88	88	88	146	101	90	82
1941	114	114	126	125	98	98	174	82	74	84	87	94	74
1942	94	96	125	101	103	117	98	112	101	99	108	112	94
1943	128	151	160	120	112	107	171	124	101	101	107	129	101
1944	117	112	112	105	84	92	149	158	96	212	136	173	84
1945	146	156	141	121	130	106	94	86	92	90	88	124	86
Max.	1760	1760	2670	2520	2040	1820	1470	1580	1610	1730	1290	1410	743
Min.	94	96	108	101	84	82	88	82	74	84	76	74	74
Mean	438	466	542	469	465	365	384	376	345	411	353	399	216

Catawba River at Catawba, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1896	1897	1898	1899		1901	1934	1935	1936	1937
Jan. 7		769	885	3820		2160		1300	1900	5080
14		775	911	3550		3930		3580	1950	2200
21		1330	1080	2270		2140		4690	5270	
28		1410	2540	1630		1810		2060	3800	
Feb. 4		1670	1180	3470		1910			1850	3350
11		8010	917	8720		2010			1800	2390
18		2970	898	3800		1960			2020	2400
25		5070	891	2900		1870			1590	2080
Mar. 4		1500	859	6910		1860			1720	2030
11		5380	827	4900		2030			1650	2050
18		6250	866	9950		2090			1690	2050
25		2930	930	14500		2290			1560	1810
Apr. 1		1510	3730	6360		7750			1720	1510
8		8010	1620	5580		6650			646	1670
15		2260	1050	4440		2980			3970	1520
22		1540	1160	2800					2120	1540
29		1430	1090	3140					1650	1640
May 6		3210	1100	2530		2320			1600	1640
13		1740	1200	4060		2220			1690	1460
20		1340	820	2300		2800			1360	1500
27		1050	1210	1790		14300			1510	1600
June 3		930	833	1600		3370			1460	1400
10		1570	724	1720		2470			982	1160
17		1090	1010	2050		5930		1010	1040	1210
24		1000	943	1430		3570		1020	1050	1050
July 1		840	743	1220		2110			1100	1200
8		1050	1030	1200		1770			911	678
15	6410	1120	2660	1120		2160			1410	762
22	1380	1160	2330	988		2560			1430	775
29	1120	1340	2710	1560		2400			1240	685
Aug. 5	911	969	3960	1010		1760			1220	736
12	730	1250	4100	1230		7040			1510	937
19	724	762	2800	885		11000			1400	963
26	574	652	2290	833		6200			1320	1080
Sept. 2	583	614	2440	1490		5210			1360	1050
9	840	605	4370	1190		2350			1320	982
16	569	614	1400	963		1910			1280	1070
23	535	665	5760	1010		2290			1450	1690
30	891	762	6330	801		2030			1630	1580
Oct. 7	691	549	8080	795		2000			1740	1230
14	528	2690	3110	1030		1760			1740	1400
21	510	924	3480	885		1530			1650	5320
28	510	678	5070	891		1510			2030	2170
Nov. 4	581	917	2060	891		1500			1390	2060
11	2580	685	1510	950		1540			1480	2110
18	678	614	1670	891		1420			1290	2170
25	678	614	2040	833		1600	1630	1510	2160	1560
Dec. 2	3600	1120	1600	891		1380	1850	1800	1650	1710
9	1110	808	3140	930		1510	2100	943	1450	1910
16	1320	730	1590	3290		4900	1820	1000	1180	1930
23	1180	917	1660	1330		2120	1690	1180	1270	1960
31	711	956	1950	2220		6780	917	1290	1360	1270
Maximum		8010	8080	14500		14300			5320	5270
Minimum		549	724	795		1380			611	554

Catawba River at Catawba, N. C.

Mean Weekly Discharge in Million Gallons per day (cont'd)

Week Ending	1938	1939	1940	1941	1942	1943	1944	1945		
Jan. 7	1930	833	606	975	678	2540	659	956		
14	1790	872	627	1120	678	2320	891	1340		
21	1780	788	749	1020	652	1870	1310	1500		
28	1600	904	730	995	646	2390	1230	1030		
Feb. 4	1870	1210	711	898	636	3330	1140	743		
11	1800	1910	736	801	898	2850	1310	859		
18	1890	3370	665	775	1500	2420	1210	1140		
25	1710	2240	788	833	1750	2060	2320	1940		
Mar. 4	1640	3700	859	840	1370	1780	2050	2220		
11	1300	2780	872	782	2420	1400	1050	2030		
18	1180	2090	827	937	2560	1180	1120	1940		
25	1130	1890	646	814	1730	1420	2820	1250		
Apr. 1	1260	1820	782	1050	1650	1700	3870	1320		
8	1400	1980	801	1450	1940	1580	2340	1320		
15	1290	1680	917	1180	1120	1280	1510	756		
22	1290	1730	1000	1380	969	1930	2050	866		
29	1340	1320	1740	956	724	2290	1480	1620		
May 6	1210	1700	1780	833	560	1980	1600	1620		
13	1090	1010	1850	924	659	1700	1750	1180		
20	1000	1350	1130	879	2220	1780	975	1670		
27	1120	988	717	743	4340	1450	917	1760		
June 3	1070	1340	698	736	2220	1510	950	1450		
10	1270	1020	636	717	1180	917	891	995		
17	1090	1260	659	609	1910	963	782	782		
24	1140	950	659	685	1840	1140	678	598		
July 1	1070	872	659	808	904	1250	643	554		
8	711	576	555	808	1410	1460	685	180		
15	730	833	717	1000	1080	4020	1050	455		
22	808	885	743	4680	704	2510	1370	463		
29	1230	827	769	1860	795	1630	833	788		
Aug. 5	1510	769	756	917	1370	1410	678	1120		
12	2090	866	775	917	853	950	801	1070		
19	1960	891	16400	730	769	1130	801	625		
26	917	1320	2210	629	1500	853	814	1050		
Sept. 2	685	1240	4850	605	1050	730	626	956		
9	623	1180	2750	672	3150	623	585	775		
16	589	1010	2240	711	2420	590	775	724		
23	749	782	1850	846	1310	652	775	9560		
30	885	769	995	872	1210	711	1170	1850		
Oct. 7	808	678	1050	1070	1320	583	1870	1100		
14	846	609	1160	1010	1250	691	1360	1380		
21	1190	665	795	827	1170	646	1720	1100		
28	885	652	904	1300	1100	644	1980	1250		
Nov. 4	853	643	827	724	685	717	1420	1450		
11	872	636	924	808	749	582	1470	1540		
18	872	698	924	820	917	846	1210	1120		
25	1010	982	911	782	963	782	762	950		
Dec. 2	1230	704	1020	853	756	808	1050	1300		
9	1500	730	1160	995	917	943	1020	1200		
16	1810	736	1210	1020	1040	1050	1100	1820		
23	1230	659	808	1050	1110	814	859	1730		
31	827	496	788	435	2420	513	613	1760		
Maximum	2090	3700	16400	14680	14340	4020	3870	9560		
Minimum	589	496	555	435	560	513	585	180		

Bridgewater Reservoir near Bridgewater, N. C.

Location. - Reservoir formed by Bridgewater dam on Linville and Catawba Rivers, lat. $35^{\circ}44'40''$, long. $81^{\circ}50'35''$, 2 miles northeast of Bridgewater, Burke County.

Drainage area. - 380 square miles.

Records available. - May 1919 to December 1945.

Remarks. - Reservoir, first put in use May 5, 1919, is in two divisions, one on Catawba River and one on Paddy Creek and Linville River, connected by a canal and has a total storage capacity of 12,582,000,000 cubic feet below gage height 100.0 feet (crest of spillways). Storage capacity under normal operation is 10,506,000,000 cubic feet above gage height 60 feet in Catawba division and above gage height 20 feet in Paddy-Linville division. Surface area at maximum design level, 6,500 acres. Reservoir used for power. Record of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1919												
1920			+970	+875	-87	+30	-99	+420	-164	-369	-85	+634
1921	-176	+187	+60	+217	-29	-167	+273	-364	-583	-499	-374	-427
1922	+186	+718	+873	+503	-14	-70	+130	-210	-660	-244	-984	-205
1923	-116	+579	+552	+346	+832	-189	-145	-96	-329	-644	-317	+94
1924	+666	+217	+347	+451	+55	-97	+94	-229	+209	-581	-663	+46
1925	+463	-139	+92	-45	-133	-262	-270					
1926			+311	+364	+164	+87	+123	+253	+30	-603	-122	-65
1927	-362	+294	+468	+379	+193	+135	+7	+7	-75	-205	-304	+335
1928	-285	+119	+116	+439	-63	-160	-19	+263	-22	-123	-725	-391
1929	+391	+283	+598	0	0	-7	-34	-400	+384	+70	+15	-7
1930	-29	-53	-7	-207	-301	-389	-268	+63	+30	-256	-142	-118
1931	+12	-160	+162	+660	+297	-60	-335	-118	-586			
1932	+593	+397	+335	-17	-31	-125	-326	+113	-763	+591	+566	+348
1933	-128	+16	-63	+100	-101	-650	-304	-80	-269	-181	-249	
1934		-198	+977	+479	+227	+591	+48	-96	+179	-51	-264	+381
1935	+101	-112	+186	-60	-265	-259	+19	-273	-117	-965	-254	-321
1936	+1346	+637	+494	-22	-260	-107	+80	+244	-459	+444	-810	+263
1937	+591	0	-236	+102	-118	0	-70	-229	-331	+417	-444	-379
1938	-212	-467	+326	+207	-63	+137	+465	+352	+15	-198	-67	-531
1939	+383	+510	-215	-279	-188	-25	+147	+316	-177	-55	-209	-80
1940	+17	+201	+297	-12	-304	+132	-24	+555	-631	-101	-60	-29
1941	+46	-45	+166	+125	-137	+10	+412	+63	-217	-504	-172	+43
1942	+260	+473	+82	-65	+48	-27	-34	+123	-50	-212	-37	+345
1943	-7	-235	+128	0	-39	-15	+19	-87	-32	-84	-87	-53
1944	+137	-144	+200	-30	-130	0	+14	-101	+82	-72	-174	+137
1945	+51	+174	-164	+177	-150	-22	+150	-116	+155	-123	-40	+183

Rhodhiss Reservoir at Rhodhiss, N. C.

Location.- Reservoir is formed by Rhodhiss dam lat. $35^{\circ}46'30''$, long. $81^{\circ}26'25''$, on Catawba River, three-quarters of a mile west of Rhodhiss, Caldwell County, and 2 miles upstream from Carolina and Northwestern Railroad bridge.

Drainage area.- 1,088 square miles.

Records available.- March 1934 to December 1945.

Remarks.- Reservoir, first put in use Feb. 18, 1925, has a storage capacity under normal operation of 1,717,000,000 cubic feet between gage heights 85.0 and 100.0 feet (crest of spillway). Surface area at maximum design level, 3,515 acres. Reservoir used for power. River also affected by storage in Bridgewater Reservoir upstream having a storage capacity under normal operation of 10,506,000,000 cubic feet. Record of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934												
1935	+184	-45	+292	-17	-172	+35	-11	+46	+12	-25	+202	-198
1936	+142	+24	+173	-18	-58	-27	-19	+22	-13	+42	-108	+159
1937	+80	-45	-110	-3	+30	-103	+27	+157	-162	+164	-141	-25
1938	-27	+57	-111	-66	+80	+108	+87	-194	-6	-72	0	+40
1939	+83	+250	-214	+51	-121	-38	+144	-72	-20	-43	-48	+29
1940	-57	+159	-14	+48	-136	+20	-12	+393	-261	-182	+55	+110
1941	-41	0	-123	+7	-38	-20	+293	+44	-56	-87	+3	+117
1942	-40	+4	+65	-67	+30	+25	-44	+37	-11	-81	-9	+150
1943	+19	-128	-3	+10	-7	-30	+32	-38	-3	-42	+21	-3
1944	+6	-51	+155	+48	-57	-38	+27	-59	+134	-94	-23	+10
1945	-59	+20	-39	+83	-65	+31	+41	-75	+148	-48	-79	+161

Oxford Reservoir near Taylorsville, N. C.

Location.- Reservoir formed by Oxford dam lat. $35^{\circ}49'$, long. $81^{\circ}12'$, on Catawba River, 2 miles upstream from Lower Little River, and 7 miles south of Taylorsville, Alexander County.

Drainage area.- 1,310 square miles.

Records available.- February 1934 to December 1945.

Remarks.- Reservoir, first put in use Apr. 5, 1928, has a total storage capacity of 5,553,000,000 cubic feet below gage height of 100.0 feet (top of flood gates in closed position) and a storage capacity under normal operation of 2,278,000,000 cubic feet between gage heights of 85.0 and 100.0 feet, surface area at maximum design level, 4,110 acres. Reservoir used for power. River also affected by storage in Bridgewater and Rhodhiss Reservoirs upstream having a combined storage capacity under normal operation of 12,223,000,000 cubic feet. Record of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934		+97	+312	+118	-236	+60	-22	+105	-89	+52	+105	-150
1935	+282	-61	+64	-13	-183	-44	+77	-122	+23	+181	-412	+13
1936	+342	-68	+184	-35	-83	-70	-35	+123	-83	+64	-110	+106
1937	+113	-33	-91	+16	-12	-20	-71	+71	-288	+28	+238	-24
1938	-35	-4	+66	-231	-42	+81	+220	-102	-62	-133	+25	+18
1939	+50	+324	-95	-97	-38	-120	+65	+224	+170	-95	-52	-10
1940	-11	+95	+51	+168	-110	+8	-27	+246	-195	-80	-57	+166
1941	-20	-13	+150	-77	-12	-25	+73	+29	-81	-110	-35	+45
1942	+62	-9	+122	-60	+50	0	-41	+33	-8	-61	-25	+136
1943	+26	-134	+24	+30	-49	+73	-58	-4	-70	-27	-44	-37
1944	+95	+98	+84	-57	-8	-30	+25	-13	+61	-91	-20	-16
1945	0	+160	-195	+106	0	-54	+102	-122	+100	-12	-99	+189

Lookout Shoals Reservoir near Catawba, N. C.

Location.- Reservoir formed by Lookout Shoals Dam, lat. $35^{\circ}46'$, long. $81^{\circ}06'$, on Catawba River, $\frac{1}{4}$ miles upstream from bridge on U. S. Highway 64 and 70, and $\frac{1}{4}$ miles north of Catawba, Catawba County.

Drainage area.- 1,449 square miles.

Records available.- February 1934 to December 1945.

Remarks.- Reservoir, first put in use Dec. 2, 1915, has a storage capacity of 1,355,000,000 cubic feet below gage height 100.0 feet (crest of spillway) and a storage capacity of 1,74,000,000 cubic feet under normal operation between gage heights 90.0 and 100.0 feet. Surface area at maximum design level, 1,270 acres. Reservoir used for power. River also affected by storage in Bridgewater, Rhodhiss, and Oxford Reservoirs upstream which have a combined storage capacity under normal operation of 14,501,000,000 cubic feet. Record of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934		-9	+4	+13	-13	-14	+16	+22	-36	+27	+8	-32
1935	+38	-19	+40	0	-41	-13	+12	-12	-41	+29	-12	+34
1936	+9	-18	-1	+12	-9	-29	-19	+11	-12	+14	-8	+14
1937	+51	-80	+27	-29	+4	-4	-13	+46	-58	+68	-17	-28
1938	+18	-43	+21	-4	+6	+18	-5	-51	+21	0	+26	-27
1939	+19	+78	-52	-39	+6	-23	+28	+2	-21	+20	+1	+6
1940	+1	+16	-18	+3	-16	+18	-4	+83	-81	-1	-2	-1
1941	+16	-13	+1	+1	+13	-51	+31	+9	-26	+25	-39	+36
1942	+18	-13	+10	-16	-15	+24	+2	-2	+4	-9	-18	+53
1943	-4	-23	-10	+1	+12	-7	-5	-5	-9	+13	+5	-6
1944	-11	+26	+37	-49	-2	+10	-8	-37	+75	-35	+5	-6
1945	+6	+29	-1	+2	-9	-10	+9	-11	+5	+15	-4	+30

Mountain Island Reservoir near Mt. Holly, N. C.

Location.- Reservoir formed by Mountain Island dam, lat. $35^{\circ}20'$, long. $80^{\circ}59'$, on Catawba River, $1\frac{1}{2}$ miles downstream from State Highway 16, and 3 miles northeast of Mt. Holly, Gaston County.

Drainage area.- 1,860 square miles.

Records available.- February 1934 to December 1945.

Remarks.- Reservoir, first put in operation December 16, 1923, has a total storage capacity of 1,826,000,000 cubic feet between gage heights of about 76.0 and 100.0 feet (crest of spillway) and a usable storage capacity of 1,132,000,000 cubic feet between gage heights 90.0 and 100.0 feet. Surface area at maximum design level, 3,250 acres. Reservoir used for power. River also affected by storage in Bridgewater, Rhodhiss, Oxford and Lookout Shoals Reservoirs upstream which have a combined capacity under normal operation of 14,975,000,000 cubic feet. Record of change in contents from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934		+101	+95	-71	-38	-63	-43	+21	+68	-76	+78	+8
1935	+101	-121	+183	-136	-54	+20	-43	+72	-151	+72	-33	-12
1936	-12	+139	-21	+57	-25	-40	+27	-18	+3	+34	-104	+91
1937	+115	-82	-91	+24	+15	-39	+66	-77	-9	+147	-223	+14
1938	+28	+21	+75	-91	+30	+23	+67	-124	-34	+5	+54	+57
1939	-57	+223	-111	-74	-76	+61	+107	-159	+104	-46	+53	+25
1940	-129	+30	+58	-18	-14	+57	-47	+203	-249	+24	+23	+32
1941	-55	-21	+91	+16	-27	+32	-15	+3	-93	+39	0	+32
1942	-36	+11	-47	-25	+36	-22	0	+6	-40	+39	-69	+144
1943	+3	-108	-40	+11	-14	+20	+29	-70	+22	+34	-24	+38
1944	-84	+14	+143	0	-148	+42	0	-38	+247	-190	-6	+57
1945	-36	-10	-12	-3	-44	+5	+95	-153	+164	-140	+91	+100

Linville River at Branch, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}47'50''$, long. $81^{\circ}53'20''$, at highway bridge at Branch, Burke County, a quarter of a mile upstream from Lake James.

Drainage area.- 65 square miles.

Records available.- June 1922 to December 1945.

Average discharge.- 23 years, 89 million gallons per day.

Extremes.- Maximum discharge, 25,500 million gallons per day Aug. 13, 1940 (gage height, 11.4 feet), by slope-area method; minimum 1.9 million gallons per day Jan. 2, 1940, result of low temperature.

Flood of July 1916 reached a stage slightly lower than that of Aug. 13, 1940.

Remarks.- Small diurnal fluctuation caused by mill above station.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1922													
1923	100	122	147	83.3	200	93.0	87.9	51.8	32.5	54.9	27.4	60.5	
1924	214	98.2	156	177	95.6	52.5	101	92.4	62.3	59.2	29.5	44.3	80.8
1925	120	78.2	65.9	54.1	75.6	32.2	29.1	10.0	8.9	84.6	44.1	105	111
1926	98.8	129	89.1	110	37.9	21.9	46.0	68.5	51.2	31.6	105	122	75.9
1927	84.0	117	127	101	53.6	73.0	47.7	28.1	23.9	49.1	103	155	80.2
1928	80.1	69.8	89.8	149	151	82.7	75.6	339	195	109	65.2	46.1	121
1929	76.2	125	266	85.3	125	92.4	59.0	41.4	173	233	166	85.9	127
1930	73.0	67.2	87.2	60.7	46.7	28.8	14.9	27.5	25.2	17.8	39.0	59.7	45.6
1931	71.7	40.6	80.8	183	74.3	39.7	61.4	82.0	37.9	17.9	18.0	72.4	65.0
1932	151	106	101	82.0	95.6	53.4	20.4	21.7	17.2	173	118	156	91.3
1933	111	133	91.1	193	107	14.1	74.3	76.9	57.8	32.7	31.7	28.6	81.8
1934	42.7	43.2	185	129	45.2	125	65.9	67.2	64.4	91.1	137	118	93.0
1935	236	91.7	176	123	62.0	39.4	67.2	98.2	135	36.2	84.0	67.2	101
1936	245	145	177	204	69.1	37.3	29.3	44.8	35.1	280	62.1	107	120
1937	286	114	69.1	79.5	81.4	41.3	29.7	76.2	85.3	179	105	78.8	102
1938	82.0	89.8	108	63.7	57.0	70.4	180	129	34.0	21.8	101	51.3	82.7
1939	117	229	123	74.3	54.7	61.5	73.0	101	32.6	22.3	20.7	20.0	76.2
1940	20.5	58.6	93.0	161	49.2	82.0	56.0	700	90.4	34.5	40.2	101	125
1941	67.2	39.3	63.1	74.9	31.6	21.8	154	31.8	20.0	13.4	23.3	69.8	51.1
1942	57.2	117	179	59.9	203	172	52.5	63.0	184	66.5	51.9	144	112
1943	143	138	103	136	112	79.5	147	39.1	24.5	20.5	28.4	25.4	82.7
1944	51.4	113	156	99.5	62.5	54.4	36.9	26.3	41.1	79.5	53.9	71.1	70.4
1945	99.5	120	96.3	130	147	51.0	58.9	48.3	306	98.8	78.2	112	112
Max.	286	229	266	204	203	172	180	700	306	280	166	156	127
Min.	20.5	39.3	63.1	54.1	31.6	21.8	14.9	10.0	8.9	13.4	18.0	20.0	45.6
Mean	114	104	123	114	88.6	63.0	69.2	94.8	78.8	74.7	66.2	81.9	89.8

Linville River at Branch, N. C.
Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1922													
1923	388	201	533	182	1050	245	157	93	56	278	30	171	1050
1924	1480	149	349	490	154	81	245	105	171	54	121	187	1850
1925	245	108	110	165	182	66	519	215	1850	312	79	510	245
1926	814	245	157	230	59	38	604	147	149	49	659	349	814
1927	182	295	262	497	145	118	140	44	41	262	1150	472	1150
1928	158	102	214	329	388	171	169	3230	808	459	99	57	3230
1929	275	749	1210	189	239	158	104	99	1900	1380	457	135	1900
1930	90	143	269	138	99	40	22	233	67	38	123	288	288
1931	307	49	346	561	166	68	251	367	99	24	25	198	561
1932	481	251	367	216	561	160	34	56	63	1850	346	617	1850
1933	223	307	189	1760	233	110	268	326	160	125	62	43	1760
1934	99	251	769	457	63	326	112	152	507	514	898	736	898
1935	2480	233	833	288	94	80	135	307	853	183	704	185	2480
1936	982	420	466	1020	138	72	46	109	194	3990	111	591	3990
1937	917	191	88	148	284	62	50	685	318	1410	351	196	1410
1938	191	140	267	86	205	127	840	364	48	36	559	101	840
1939	582	437	305	111	79	220	593	1230	59	61	32	32	1230
1940	49	107	271	1120	79	316	233	9040	399	50	106	879	9040
1941	138	59	106	280	57	65	937	51	37	28	71	295	937
1942	114	449	924	97	988	629	131	194	1060	116	78	1070	1070
1943	348	415	191	749	497	260	391	58	59	31	128	96	749
1944	119	439	475	186	102	287	104	50	522	391	212	127	522
1945	310	348	248	390	1050	79	109	121	2420	263	138	229	2420
Max.	2480	749	1210	1760	1050	629	937	9040	2420	3990	1150	1070	9040
Min.	49	49	88	86	57	38	22	19	14	24	25	32	245
Mean	477	265	389	421	301	164	263	721	494	498	282	318	1751

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1922													
1923	42	52	64	59	52	47	56	35	25	20	23	29	19
1924	73	66	85	101	67	37	43	41	35	19	26	59	17
1925	73	56	49	34	41	23	30	23	17	42	32	26	5.2
1926	25	67	59	51	23	14	31	6.5	23	23	23	59	6.5
1927	59	63	66	56	31	41	31	21	15	15	25	48	15
1928	45	53	45	78	59	51	44	54	66	44	50	32	32
1929	36	38	116	65	79	59	43	23	18	54	82	57	18
1930	45	49	43	43	31	22	9.7	8.4	12	12	16	32	8.4
1931	31	34	43	56	51	30	29	39	21	13	15	17	13
1932	57	61	45	49	45	31	12	12	6.5	14	68	52	6.5
1933	65	79	67	75	55	25	32	39	30	18	21	21	18
1934	21	23	55	56	34	48	43	41	22	39	40	56	21
1935	84	62	65	70	49	30	28	34	36	23	25	40	23

Linville River at Branch, N. C.

Minimum Discharge in Million Gallons per day (Continued)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1936	55	84	75	73	41	21	19	26	22	43	41	43	19
1937	122	81	51	47	47	30	20	28	29	30	68	49	20
1938	59	59	67	48	37	45	41	43	23	19	19	28	19
1939	53	88	63	55	41	26	25	28	23	14	16	14	14
1940	9.7	18	52	56	36	37	32	34	49	23	28	26	9.7
1941	48	27	27	39	19	14	32	19	14	9.0	15	16	9.0
1942	35	53	46	38	38	61	26	30	48	52	41	52	26
1943	70	66	49	67	61	45	56	25	15	17	18	10	10
1944	26	30	84	72	45	22	21	15	13	31	31	45	13
1945	43	37	59	58	70	34	34	17	28	54	54	67	17
Max.	122	88	116	101	79	61	56	54	66	54	82	67	32
Min.	9.7	18	27	34	19	14	6.5	5.8	5.2	7.8	15	10	5.2
Mean	51	54	60	59	46	34	30	28	25	26	33	37	16

Linville River at Branch, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Jan.	7	163	116	129	41	114	99	89	85	125	200	146
		73	366	114	34	93	93	79	78	79	189	105
		54	323	149	233	68	72	68	72	49	101	72
		79	106	105	96	63	63	76	61	45	70	123
Feb.	4	172	85	75	155	73	62	54	68	41	207	99
		132	105	70	120	67	71	106	92	37	134	150
		139	74	89	92	98	66	86	60	44	90	136
		85	110	81	127	199	79	79	56	41	79	151
Mar.	4	76	132	68	109	123	63	343	48	56	62	81
		113	216	65	106	176	81	276	143	60	81	94
		238	106	57	84	162	88	464	84	50	52	74
		180	145	82	84	101	92	180	81	59	141	128
Apr.	1	88	159	61	90	75	124	130	58	189	172	80
	8	79	227	52	103	62	141	85	80	330	110	96
	15	99	180	47	167	74	197	74	67	118	89	93
	22	90	198	47	109	141	109	78	56	132	58	505
	29	67	118	63	65	135	154	96	44	152	54	109
May	6	93	110	80	47	73	108	138	38	68	176	114
	13	108	110	83	44	52	172	128	48	98	85	160
	20	223	98	105	43	43	110	107	61	60	74	103
	27	177	78	57	26	35	203	130	45	83	67	67
June	3	386	72	41	28	76	140	124	34	52	48	65
	10	116	56	34	24	75	83	103	31	39	33	46
	17	115	75	60	29	20	72	91	81	32	45	56
	24	88	59	45	26	21	91	61	70	26	37	41
July	1	66	65	45	36	17	52	90	97	25	32	41
	8	89	125	185	31	26	37	61	63	16	48	32
	15	70	78	132	34	14	43	94	54	13	37	21
	22	111	127	63	37	8.4	67	63	61	16	99	14
	29	93	58	48	19	37	45	79	61	12	69	14
Aug.	5	57	67	34	12	190	39	65	65	14	71	26
	12	46	72	35	12	63	28	202	45	9.7	63	36
	19	66	56	36	10	50	26	975	36	21	52	16
	26	45	56	65	7.8	76	25	168	33	68	149	14
Sept.	2	42	54	34	7.8	53	27	165	25	18	56	14
	9	31	65	26	7.8	72	26	401	59	15	59	15
	16	35	54	21	10	71	28	125	39	24	30	8.4
	23	28	53	47	9.7	35	24	172	63	38	30	14
	30	36	70	572	8.4	30	16	78	575	27	29	32
Oct.	7	25	30	163	10	37	23	62	420	14	18	39
	14	122	24	71	9.7	31	106	54	86	15	20	32
	21	44	29	52	21	29	47	127	68	25	17	535
	28	39	36	62	28	31	30	196	404	16	16	118
Nov.	4	30	30	52	18	26	28	87	207	20	19	159
	11	29	62	45	36	39	30	71	137	23	17	140
	18	27	34	39	78	182	243	57	185	68	16	88
	25	26	38	50	28	129	112	68	160	43	22	103
Dec.	2	26	63	37	27	112	60	53	104	34	17	79
	9	37	116	187	39	68	291	47	92	97	49	55
	16	52	68	131	26	103	149	46	72	53	89	119
	23	96	67	67	30	82	130	47	94	41	82	103
	31	65	70	63	22	229	83	43	83	53	82	349
Max.		386	572	149	233	291	975	575	143	330	535	505
Min.		24	21	7.8	8.4	16	43	25	9.7	16	8.4	23

Linville River at Branch, N. C.

Mean Weekly Discharge in Million Gallons per day (cont'd)

Week Ending	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	
Jan.	7	50	127	273	461	88	154	14	105	78	157	63	174
	14	57	591	284	177	70	93	20	61	43	85	34	101
	21	38	127	348	352	61	70	31	56	50	135	72	76
	28	34	164	146	194	106	66	17	54	48	149	42	67
Feb.	4	30	83	138	176	83	306	18	48	75	191	36	48
	11	30	67	149	122	68	266	46	37	134	239	56	52
	18	31	140	176	98	104	259	75	45	153	118	156	131
	25	28	82	122	108	103	123	75	32	108	83	155	211
Mar.	4	285	74	92	83	93	224	123	37	64	63	121	117
	11	181	88	83	82	143	176	96	65	294	63	130	100
	18	66	203	135	69	127	106	75	72	225	86	113	68
	25	76	169	222	61	90	76	68	57	135	152	159	77
Apr.	1	292	307	325	54	72	70	85	74	118	136	257	134
	8	85	138	426	86	67	79	88	127	76	79	110	112
	15	229	109	214	81	70	72	90	67	65	89	99	65
	22	134	125	107	56	67	63	353	48	48	259	92	202
	29	78	117	84	94	54	81	132	62	45	130	88	152
May	6	52	72	70	89	46	70	70	43	64	76	70	103
	13	41	60	87	65	39	54	51	42	41	154	71	79
	20	42	56	83	132	47	48	39	28	463	109	60	322
	27	45	68	54	63	57	52	42	23	235	123	55	118
June	3	65	50	43	47	123	82	46	20	98	77	50	73
	10	218	49	39	49	72	100	57	19	155	80	106	54
	17	90	37	52	40	58	52	124	36	364	70	52	50
	24	144	37	30	40	63	37	106	15	101	54	34	54
July	1	57	32	24	33	61	28	50	19	85	127	26	38
	8	59	38	31	28	61	43	41	236	57	141	31	41
	15	71	41	33	34	83	151	42	167	50	268	52	51
	22	69	81	28	24	267	43	102	187	34	122	43	81
	29	59	112	26	32	309	61	41	71	67	83	26	60
Aug.	5	68	50	33	37	227	48	44	44	44	51	33	80
	12	85	39	56	58	240	34	143	38	37	48	34	43
	19	77	88	57	45	89	244	1960	27	60	40	25	37
	26	60	216	35	45	55	87	96	29	115	34	17	51
Sept.	2	44	76	32	233	43	69	963	23	72	25	19	34
	9	32	352	39	136	42	45	115	25	414	26	14	85
	16	99	114	28	78	36	29	71	23	140	17	20	229
	23	76	56	26	47	31	26	59	16	72	32	40	879
	30	58	40	51	35	25	24	54	16	126	22	97	110
Oct.	7	146	31	57	122	25	36	40	13	76	19	65	120
	14	131	28	195	78	20	21	34	12	70	19	41	98
	21	65	31	866	331	21	17	37	12	63	21	132	67
	28	45	27	91	197	21	17	26	15	60	22	92	124
Nov.	4	57	61	70	124	21	19	51	23	63	23	48	69
	11	63	33	83	76	200	19	36	34	54	48	37	56
	18	45	196	65	174	56	17	44	16	48	26	38	68
	25	201	69	47	76	113	28	32	22	49	21	47	111
Dec.	2	394	60	46	85	70	20	32	18	51	19	108	83
	9	151	47	79	68	53	17	28	109	85	21	75	134
	16	74	98	88	59	48	17	35	42	78	17	68	107
	23	68	74	100	68	41	21	47	36	61	14	54	74
	31	67	56	168	116	60	24	287	103	346	47	82	141
Max.		394	591	866	461	309	306	1960	236	463	268	257	879
Min.		28	27	24	24	20	17	14	12	34	14	14	34

Henry Fork near Henry River, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}41'05''$, long. $81^{\circ}24'05''$, 400 feet downstream from highway bridge on county road at Old Link Ford, $1\frac{1}{4}$ miles downstream from Catawba-Burke county line, and 2 miles downstream from village of Henry River, Burke County.

Drainage area.- 80 square miles.

Records available.- July 1925 to November 1932, December 1941 to December 1945.

Extremes.- Maximum discharge 9,900 million gallons per day Oct. 2, 1929 (gage height, 18.40 feet, site then in use); minimum 1.9 million gallons per day (regulated) Dec. 20, 1942.

Maximum discharge known 20,200 million gallons per day Aug. 13, 1940 (gage height, 29.2 feet, site then in use, from floodmarks), by computation of flow over dam at Henry River.

Remarks.- Considerable diurnal fluctuation and some regulation caused by mill above station. About 3 million gallons per day is diverted for water supply by city of Morganton and Morganton State Hospital and wasted into Catawba River.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1925							*19.7	20.5	21.8	22.5	35.8	30.9	
1926	105	94.3	64.3	62.7	36.2	22.2	23.3	32.9	17.6	16.5	30.4	53.0	46.5
1927	35.1	79.5	63.8	42.8	28.9	32.3	32.4	28.4	22.8	24.6	25.2	103	43.3
1928	58.3	73.6	71.1	93.0	78.2	53.8	46.6	397	154	74.9	50.1	47.5	100
1929	59.3	165	209	82.7	77.5	74.3	71.7	52.9	116	417	127	84.6	128
1930	86.6	81.4	82.7	65.9	49.5	40.0	23.3	27.4	23.4	17.8	32.5	67.8	49.7
1931	71.1	32.3	69.1	136	108	37.1	60.1	79.5	34.0	22.3	22.5		
1942	47.6	128	135	60.5	64.2	48.6	49.8	38.4	46.8	32.4	30.6	119	66.5
1943	125	89.8	95.0	115	69.8	52.1	100	40.4	34.6	28.9	38.8	37.9	69.1
1944	70.4	102	184	139	73.6	55.0	62.2	32.4	73.6	103	53.1	67.2	84.6
1945	71.7	111	83.3	78.2	57.5	37.1	55.7	45.7	384	57.9	56.3	145	98.2
Max.	125	165	209	139	108	74.3	100	397	384	417	127	145	128
Min.	35.1	32.3	63.8	42.8	28.9	22.2	19.7	20.5	17.6	16.5	22.5	30.9	43.3
Mean	73.0	95.7	106	87.6	64.3	45.2	49.5	72.3	84.4	74.3	45.7	75.6	76.2

*26-31 July.

Henry Fork near Henry River, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1925							*27	41	57	45	156	54	
1926	1510	301	129	98	70	47	112	80	43	26	112	258	1510
1927	63	672	225	76	56	56	118	79	56	52	68	478	672
1928	147	430	-----	-----	-----	-----	90	5220	711	149	57	68	-----
1929	127	1310	638	127	234	136	189	168	975	8140	623	120	8140
1930	121	194	291	128	90	79	40	90	54	30	-----	632	-----
1931	598	41	-----	-----	749	59	-----	-----	136	34	35	-----	-----
1942	80	1150	1110	102	219	118	260	165	179	52	61	1470	1470
1943	1340	273	289	943	257	126	587	105	65	42	156	181	1340
1944	368	442	956	407	158	102	392	100	1300	1260	208	118	1300
1945	130	307	158	150	76	61	153	240	4840	94	127	497	4840
Max.	1510	1310	1110	943	749	136	587	5220	4840	8140	623	1470	8140
Min.	63	41	129	76	56	47	27	41	43	26	35	54	672
Mean	448	512	474	254	212	87.1	197	629	765	902	160	388	2750

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1925							*16	4.97	5.8	6.3	13	7.8	
1926	6.5	45	27	45	4.33	4.97	2.65	4.97	4.52	4.78	5.6	16	2.65
1927	21	16	37	32	14	18	6.1	5.2	6.3	7.1	6.1	26	5.2
1928	30	36	-----	-----	-----	15	26	30	72	56	45	39	-----
1929	46	39	84	57	42	47	42	30	33	58	63	65	30
1930	65	55	52	54	36	29	7.1	12	4.01	6.1	9.7	21	4.01
1931	28	25	30	48	42	27	24	29	13	8.4	16	-----	-----
1942	5.2	26	55	13	5.8	13	12	3.88	3.88	3.23	2.58	2.58	2.58
1943	6.5	40	47	29	34	3.88	41	4.52	6.5	5.2	4.5	3.88	3.88
1944	7.8	8.4	54	90	52	16	16	3.88	3.23	5.2	6.5	26	3.23
1945	28	18	50	36	39	3.88	11	3.88	4.52	21	5.8	45	3.88
Max.	65	55	84	90	52	47	42	30	72	58	63	65	30
Min.	5.2	8.4	27	13	4.33	3.88	2.65	3.88	3.23	3.23	2.58	2.58	2.58
Mean	24.4	30.8	48.4	44.9	29.9	17.8	18.5	12.0	14.3	16.5	16.2	25.2	6.9

*26-31 July.

Henry Fork near Henry River, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1925	1926	1927	1928	1929	1930	1931		1942	1943	1944	1945	
Jan.	7		33	47	90	67	92	156		54	67	118	90
	14		41	32	62	69	79	57		51	40	54	78
	21		302	34	40	54	92	45		37	103	85	64
	28		57	27	48	51	76	39		41	250	43	59
Feb.	4		151	32	43	47	101	34		70	147	34	52
	11		77	24	54	203	105	31		113	145	48	52
	18		47	46	53	85	73	32		244	76	191	146
	25		89	205	132	85	65	33		86	61	106	177
Mar.	4		78	55	62	391	56	40		66	56	81	96
	11		81	112	48	246	140	48		323	60	93	81
	18		71	62	94	296	76	37		88	81	112	68
	25		53	45	78	154	67	56		65	167	262	84
Apr.	1		58	40	79	107	61	176		93	89	337	96
	8		63	36	69	68	81	310		63	70	114	72
	15		81	37	120	68	67	79		73	66	160	54
	22		58	50	76	99	61	64		57	245	172	75
	29		47	51	103	94	58	83		48	90	112	113
May	6		40	32	77	114	51	51		45	67	94	71
	13		42	30	116	67	53	111		40	64	84	59
	20		44	26	61	63	61	60		66	58	70	57
	27		32	24	70	65	41	235		112	93	60	50
June	3		21	36	57	85	37	49		52	63	56	43
	10		23	28	62	75	52	38		47	62	83	41
	17		17	36	65	66	36	37		68	57	55	36
	24		25	37	47	56	41	36		34	41	44	38
July	1		21	26	45	94	34	32		57	46	34	31
	8		17	20	40	57	25	49		48	70	53	41
	15		16	26	64	66	18	50		30	241	121	47
	22		13	61	39	94	28	90		26	61	55	48
	29		33	30	45	74	20	65		78	49	34	91
Aug.	5		25	59	22	37	80	23	67	34	40	52	50
	12		31	44	18	564	48	28	111	32	41	32	38
	19		18	27	28	1020	39	34	36	56	54	28	26
	26		12	26	45	96	53	27	120	49	31	23	77
Sept.	2		16	21	19	78	43	20	33	27	36	24	33
	9		20	18	21	270	67	28	36	80	32	20	41
	16		32	20	23	94	48	20	26	40	33	28	264
	23		16	13	29	178	74	25	24	26	38	52	1260
	30		21	12	19	90	298	21	52	43	36	209	79
Oct.	7		21	14	20	96	1550	16	25	29	26	68	70
	14		15	16	37	69	88	20	23	34	28	43	56
	21		22	16	25	76	70	18	21	33	32	249	50
	28		28	21	21	65	106	17	17	30	29	74	58
Nov.	4		28	19	23	55	93	18	27	38	28	48	47
	11		24	19	22	52	84	23	21	29	72	34	43
	18		67	40	27	48	213	56	23	32	33	38	50
	25		27	29	26	51	120	33	21	32	27	37	79
Dec.	2		26	37	34	48	90	27		34	28	116	59
	9		23	26	233	47	90	155		75	30	78	171
	16		25	34	72	53	72	39		47	26	81	74
	23		38	31	68	48	90	36		34	25	50	59
	31		39	118	59	44	85	54		68	313	68	54
Max.			302	233	1020	1550	155			323	250	337	1260
Min.			12	18	37	39	16			26	25	20	26

South Fork Catawba River at Lowell, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}17'05''$, long. $81^{\circ}06'00''$, on county highway, just downstream from Housers Creek, 1 mile north of Lowell; Gaston County.

Datum of gage is 603.10 feet above mean sea level, datum of 1929, supplementary adjustment of 1936.

Drainage area.- 630 square miles.

Records available.- January 1942 to December 1945.

Extremes.- Maximum discharge, 1,420 million gallons per day Sept. 19, 1945; minimum discharge, 28 million gallons per day Sept. 10, 1944.

Maximum stage known, 21.33 feet in August 1940, from floodmarks.

Remarks.- City of Gastonia diverts about 1.9 million gallons per day for water supply.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1942	833	806	362	400	371	426	278	364	204	214	620		
1943	1078	672	689	638	428	402	879	339	250	192	235	267	506
1944	529	774	1331	1034	530	363	355	241	438	844	405	443	607
1945	466	771	561	508	378	233	503	261	1589	348	364	1067	585
Max.	1078	833	1331	1034	530	402	879	339	1589	844	405	1067	607
Min.	466	672	561	362	378	233	355	241	250	192	214	267	506
Mean	691	762	847	636	434	342	541	280	660	397	304	599	566

South Fork of Catawba River at Lowell, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1942	5160	2640	572	1810	1110	1360	646	2580	490	318	3680		
1943	5130	2460	2400	2870	717	1610	6590	1410	827	275	533	827	6590
1944	1670	3070	4460	3050	1480	1030	917	652	5380	5280	2020	833	5380
1945	943	2260	1600	1250	756	439	1520	567	12900	646	872	3260	12900
Max.	5130	5160	4460	3050	1810	1610	6590	1410	12900	5280	2020	3680	12900
Min.	943	2260	1600	572	717	439	917	567	827	275	318	827	5380
Mean	2580	3240	2770	1940	1190	1120	2600	819	5420	1670	936	2150	8290

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1942	287	406	238	204	190	169	168	194	134	164	218		
1943	286	337	351	335	315	209	266	159	110	130	172	144	110
1944	264	241	403	525	344	189	205	121	89	252	247	327	89
1945	327	302	389	333	256	155	147	161	143	247	232	366	143
Max.	327	337	406	525	344	209	266	168	194	252	247	366	143
Min.	264	241	351	238	204	155	147	121	89	130	164	144	89
Mean	292	292	387	358	280	186	197	152	134	191	204	264	114

South Fork of Catawba River at Lowell, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1942	1943	1944	1945				
Jan. 7		736	840	629				
14		357	370	494				
21		1090	685	413				
28		1140	326	378				
Feb. 4		1850	271	332				
11	612	1230	421	337				
18	1490	501	1220	1120				
25	820	402	898	1150				
Mar. 4	473	363	691	672				
11	1600	524	736	554				
18	605	497	711	422				
25	519	1270	2040	456				
Apr. 1	632	546	2380	749				
8	394	415	730	445				
15	427	400	1270	372				
22	327	124	1020	504				
29	291	550	1070	711				
May 6	283	402	672	443				
13	265	413	629	359				
20	319	359	442	388				
27	769	554	485	369				
June 3	287	361	361	304				
10	354	462	583	253				
17	595	587	368	226				
24	239	262	263	253				
July 1	344	344	221	183				
8	493	646	371	497				
15	287	2160	377	444				
22	226	406	474	532				
29	704	493	243	609				
Aug. 5	358	310	331	353				
12	209	335	296	254				
19	353	544	220	205				
26	295	236	173	298				
Sept. 2	200	258	172	207				
9	711	272	142	207				
16	291	185	186	642				
23	225	337	530	5460				
30	277	215	969	459				
Oct. 7	180	183	1530	380				
14	181	174	331	325				
21	190	212	859	285				
28	267	193	866	416				
Nov. 4	237	200	325	293				
11	209	322	290	262				
18	203	227	272	282				
25	208	205	291	486				
Dec. 2	256	201	879	475				
9	614	219	448	1290				
16	375	196	560	483				
23	267	189	372	408				
31	1210	455	357	2440				
Max.	1600	2160	2380	5460				
Min.	180	124	142	183				

Little Sugar Creek near Charlotte, N. C.

Location. - Water stage recorder and concrete control, lat. $35^{\circ}09'15''$, long. $80^{\circ}51'10''$, just upstream from sewage-disposal plant of city of Charlotte, a quarter of a mile downstream from Brier Creek, and 5 miles south of Charlotte, Mecklenburg County. Datum of gage is 571.6 feet above mean sea level (city of Charlotte datum).

Drainage area. - 41.4 square miles.

Records available. - July 1924 to December 1945.

Extremes. - Maximum discharge, 5,400 million gallons per day Apr. 6, 1936 (gage height 16.2 feet, from floodmarks), from rating curve extended above 1,300 million gallons per day; minimum 1.0 million gallons per day July 30, Aug. 1, 1925.

Remarks. - Records good except those below 6.5 million gallons per day, which are fair.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1924													
1925	125	30.9	24.4	15.1	9.17	6.65	3.04	15.1	2.00	3.16	15.6	13.2	22.0
1926	48.3	59.9	32.2	15.1	11.8	10.3	18.5	12.2	4.02	2.50	4.59	13.8	19.4
1927	7.69	28.6	34.6	15.9	7.49	8.53	18.1	11.4	5.32	22.0	6.03	87.2	21.1
1928	15.5	40.8	31.2	57.0	27.8	25.8	14.6	120	148	16.7	9.88	10.0	43.2
1929	15.1	116	118	28.9	35.5	32.8	14.3	12.3	12.3	57.8	35.8	44.9	43.3
1930	41.0	39.4	23.5	13.0	17.1	15.4	14.5	8.59	7.49	3.94	19.1	29.2	19.3
1931	27.9	13.0	24.6	36.0	35.4	7.69	18.1	45.0	5.39	4.02	3.70	69.8	24.4
1932	61.4	32.6	69.1	22.3	17.0	73.0	9.82	22.0	8.53	44.7	26.2	70.4	38.2
1933	30.4	37.3	30.1	20.7	19.9	9.24	9.95	24.3	78.2	14.1	6.85	9.50	24.1
1934	11.0	22.7	26.2	25.6	17.3	82.7	14.1	12.7	27.9	21.1	15.2	21.9	24.7
1935	27.7	32.8	59.1	43.2	27.9	7.62	35.6	9.37	36.4	6.30	19.2	11.2	26.3
1936	165	70.4	89.8	183	12.1	11.2	46.4	40.6	16.3	46.0	15.1	44.2	61.6
1937	91.1	39.8	31.7	66.5	23.1	24.2	14.4	15.2	9.04	15.0	12.9	18.5	30.0
1938	20.3	12.9	21.8	23.6	9.88	29.5	16.2	10.6	7.43	4.68	10.5	20.7	15.7
1939	25.2	92.4	54.1	21.1	22.5	20.3	45.1	30.6	9.37	5.72	5.63	8.91	28.0
1940	16.7	44.4	24.6	19.4	21.0	19.4	13.8	25.3	5.67	5.33	22.8	18.0	19.6
1941	17.1	12.9	24.7	29.4	8.01	11.2	74.3	8.08	4.55	6.30	4.24	20.9	18.6
1942	11.6	44.7	64.2	14.7	52.8	64.5	24.2	14.0	12.0	7.88	9.95	26.0	28.8
1943	61.1	25.4	50.5	30.2	12.4	21.6	57.6	12.4	13.1	5.32	6.12	11.4	25.7
1944	31.8	65.2	81.4	52.8	15.8	11.1	60.7	13.0	27.7	25.2	19.5	27.5	35.9
1945	26.7	56.8	28.7	23.2	11.6	6.30	32.5	10.2	138	11.3	11.4	65.9	34.9
Max.	165	116	118	183	52.8	82.7	74.3	120	148	57.8	35.8	87.2	61.6
Min.	7.69	12.9	21.8	13.0	7.49	6.30	3.04	7.75	2.00	2.50	3.70	8.91	15.7
Mean	41.8	43.8	45.0	36.0	19.8	23.8	26.6	21.8	29.4	15.6	13.4	30.5	28.8

Little Sugar Creek near Charlotte, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1924													
1925	1150	138	196	62	24	36	215	11	87	34	108	292	1150
1926	866	487	238	29	88	95	394	144	7.3	3.8	26	121	866
1927	17	397	317	113	34	27	127	78	52	254	55	537	537
1928	39	143	112	356	206	109	97	1790	1210	67	14	26	1790
1929	41	1200	982	92	162	224	45	45	62	769	172	176	1200
1930	168	165	105	32	110	74	218	61	29	11	113	222	222
1931	144	30	92	222	162	30	65	278	15	10	4.8	545	545
1932	453	114	775	76	134	730	34	327	48	636	149	228	775
1933	140	109	213	90	147	43	62	321	1340	215	23	48	1340
1934	27	191	123	132	83	698	53	177	272	295	85	103	698
1935	209	155	411	306	152	23	253	54	491	17	174	56	491
1936	1960	314	538	2310	19	65	859	506	129	181	65	211	2310
1937	349	152	90	672	148	220	142	107	38	136	63	123	672
1938	110	25	178	110	30	194	136	43	36	34	80	187	194
1939	145	566	366	56	295	156	749	388	47	17	25	53	749
1940	163	213	93	77	282	156	143	358	14	21	182	85	358
1941	62	57	90	196	15	85	969	34	15	69	7.8	189	969
1942	32	536	273	47	561	623	136	99	81	59	63	98	623
1943	628	120	337	261	27	186	475	90	66	7.8	20	107	628
1944	317	253	601	225	70	53	853	79	253	386	103	227	853
1945	106	388	129	198	45	17	312	59	1320	26	34	472	1320
Max.	1960	1200	982	2310	561	730	969	1790	1340	769	238	545	2310
Min.	17	25	90	29	15	17	28	11	5.8	3.8	4.8	26	194
Mean	339	274	298	270	133	183	289	240	255	149	82	195	871

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1924													
1925	18	17	15	9.6	6.1	3.9	9.9	5.0	4.7	11	9.0	11	1.0
1926	5.2	10	12	8.3	5.2	3.0	2.8	3.0	2.6	2.1	2.3	3.4	2.1
1927	6.1	6.7	11	7.1	4.1	4.3	4.1	3.4	2.4	2.1	3.6	11	2.1
1928	10	14	14	12	12	7.8	4.8	4.5	12	9.7	7.8	7.1	4.5
1929	9.7	9.0	31	17	13	10	7.1	5.4	5.1	7.1	10	16	5.1
1930	17	17	15	9.0	7.8	6.1	4.5	3.9	3.4	3.0	4.1	7.1	3.0
1931	11	10	10	11	7.8	4.1	5.2	6.1	3.4	3.0	3.2	4.3	3.0
1932	15	16	14	12	7.8	6.5	4.5	3.9	3.2	3.6	9.9	11	3.2
1933	16	18	16	10	7.4	4.5	4.1	4.5	4.5	4.8	5.1	5.4	4.1
1934	6.5	6.5	11	11	7.1	7.1	5.7	4.1	4.3	4.5	6.5	9.0	4.1
1935	12	11	15	14	8.4	4.5	4.5	4.3	5.4	4.8	5.1	6.0	4.3

Little Sugar Creek near Charlotte, N. C.

Minimum Discharge in Million Gallons per day (Continued)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1936	9.7	18	18	21	7.1	6.4	4.8	11	5.8	11	10	11	4.8
1937	23	16	21	10	10	8.4	5.2	4.8	4.3	5.9	7.1	6.3	4.3
1938	12	9.7	9.7	7.8	5.6	4.9	2.9	4.4	3.9	2.4	3.6	5.6	2.4
1939	9.7	18	18	13	8.4	6.5	5.4	7.1	5.4	3.6	4.2	4.8	3.6
1940	5.7	4.0	13	12	7.1	6.5	5.0	4.2	3.6	3.9	4.8	7.1	3.6
1941	10	9.0	10	10	5.4	4.5	5.2	4.5	2.8	2.1	3.4	4.8	2.1
1942	7.1	9.7	16	9.0	7.1	8.4	7.8	5.0	3.6	4.2	5.0	12	3.6
1943	12	13	13	15	7.8	6.1	9.0	5.7	4.5	4.5	5.0	5.0	4.5
1944	9.0	9.0	21	21	9.0	5.7	7.8	5.7	4.8	7.8	8.4	12	4.8
1945	14	12	15	11	7.1	3.9	4.2	5.4	5.0	9.0	7.8	9.0	3.9
Max.	23	18	31	21	13	10	9.9	11	12	11	10	16	5.1
Min.	5.2	4.0	9.7	7.1	4.1	3.0	1.2	1.0	1.3	1.3	2.3	3.4	1.0
Mean	11.4	12.1	15.2	11.9	7.7	5.9	5.3	4.9	4.4	5.1	5.8	7.8	3.5

Little Sugar Creek near Charlotte, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Jan.	7	37	20	7.9	16	15	21	36	65	26	17
	14	253	14	7.9	15	21	30	47	139	47	13
	21	224	140	7.4	12	13	74	23	20	23	7.8
	28	28	15	7.4	20	12	39	14	22	31	7.8
Feb.	4	32	93	7.7	19	10	79	11	30	20	25
	11	46	18	7.8	37	54	43	12	19	42	9.7
	18	28	14	8.9	45	55	26	16	39	41	12
	25	21	129	87	61	76	19	13	51	44	14
Mar.	4	17	20	26	19	339	17	25	18	19	59
	11	16	67	90	32	209	34	21	139	22	23
	18	44	27	19	47	78	21	11	18	19	12
	25	21	16	15	25	119	25	27	26	67	26
Apr.	1	16	25	12	29	60	17	63	121	17	33
	8	14	17	11	16	26	19	62	22	21	14
	15	14	17	11	110	28	12	20	28	26	35
	22	21	16	19	50	29	12	24	14	25	41
	29	12	9.7	8.9	63	30	9.7	16	25	12	15
May	6	10	8.4	27	19	35	9.0	21	32	43	9.7
	13	11	25	6.9	56	25	21	48	15	19	7.8
	20	9.5	10	5.2	15	47	33	18	9.7	9.8	26
	27	7.8	6.2	4.78	28	40	9.7	59	12	8.5	9.7
June	3	6.4	5.2	7.9	30	19	7.8	19	12	13	145
	10	5.6	4.13	9.0	43	21	8.4	7.8	9.0	6.9	19
	17	9.9	4.13	5.5	16	61	17	7.1	205	9.3	16
	24	6.4	12	15	18	16	12	6.3	77	5.2	24
July	1	8.2	23	4.65	16	39	26	5.3	20	16	8.4
	8	3.23	4.84	7.9	14	12	6.0	21	14	7.6	8.4
	15	23	2.07	5.2	32	16	8.4	22	7.1	15	10
	22	26	2.00	3.68	45	7.1	16	41	22	7.0	11
	29	25	1.74	63	6.4	9.7	9.0	6.2	12	7.7	17
Aug.	5	9.9	19	8.4	6.5	5.0	14	7.1	21	62	19
	12	8.9	39	9.7	10	139	12	8.4	116	16	19
	19	7.8	4.91	4.59	15	359	14	8.4	8.4	12	59
	26	6.8	3.17	29	6.2	19	15	13	52	6.8	32
Sept.	2	8.8	2.65	8.4	16	65	10	3.88	6.2	4.26	5.7
	9	7.0	2.78	5.4	3.36	134	18	12	6.7	17	9.8
	16	47	2.13	4.01	3.23	17	9.0	8.4	4.78	3.94	307
	23	37	1.55	3.29	12	379	7.1	6.3	4.39	9.0	11
	30	200	1.42	2.84	2.78	50	17	4.20	5.4	4.97	5.9
Oct.	7	20	1.49	2.58	41	30	189	3.23	3.49	9.7	37
	14	13	2.39	2.65	45	16	9.0	3.49	4.72	4.01	5.7
	21	12	2.33	2.45	5.4	12	19	3.49	4.72	169	12
	28	12	6.5	2.26	3.81	13	33	3.75	3.23	9.7	5.7
Nov.	4	12	37	2.52	4.20	11	54	17	3.75	27	6.4
	11	12	5.4	2.91	3.88	11	17	7.8	3.68	23	7.8
	18	9.7	16	7.3	12	9.7	32	46	3.62	20	5.5
	25	26	5.2	3.81	4.07	9.7	21	8.4	3.94	14	8.4
Dec.	2	12	4.78	5.4	44	9.0	63	8.4	3.94	37	5.9
	9	25	4.33	3.68	189	9.0	37	48	116	12	6.3
	16	15	4.97	18	110	12	19	9.7	89	116	5.8
	23	14	40	4.97	26	11	67	17	52	64	14
	31	56	7.1	29	18	7.8	43	45	51	102	13
Maximum		253	140	189	379	339	79	116	205	307	145
Minimum		1.42	2.26	2.78	5.0	7.1	3.23	3.23	3.94	5.2	5.2

Little Sugar Creek near Charlotte, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week Ending	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7	49	281	149	32	14	6.4	30	13	14	61
	14	26	92	37	17	32	38	12	8.4	17	13
	21	14	322	83	16	19	17	16	9.7	144	51
	28	28	26	95	18	19	9.7	12	12	70	12
Feb.	4	12	7.1	75	16	69	11	10	16	39	10
	11	12	67	34	13	83	71	9.7	26	45	65
	18	77	120	21	11	74	47	19	108	18	91
	25	19	30	56	14	25	48	10	23	16	47
Mar.	4	26	28	32	12	218	24	14	74	14	65
	11	21	37	28	39	41	16	39	108	74	47
	18	94	118	37	21	34	42	19	23	44	47
	25	57	50	34	16	19	18	19	47	76	184
Apr.	1	124	185	24	17	60	19	30	50	24	70
	8	65	625	45	40	24	23	63	16	17	26
	15	29	92	22	30	17	19	16	21	25	90
	22	23	29	18	17	23	25	12	12	62	41
	29	21	24	191	9.7	17	13	30	9.7	21	60
May	6	15	18	26	7.8	12	12	10	8.4	14	27
	13	26	14	17	6.5	14	14	9.7	11	15	16
	20	43	12	44	7.8	11	8.4	7.8	41	12	14
	27	36	9.7	14	18	59	9.7	6.1	166	12	11
June	3	9.7	7.1	11	47	12	57	5.9	13	8.4	11
	10	11	7.8	25	17	11	26	8.4	5.8	16	13
	17	7.1	11	41	9.7	52	32	20	192	15	17
	24	6.1	20	24	18	8.4	12	5.1	12	13	7.1
July	1	5.1	7.8	12	41	9.7	9.0	14	30	81	16
	8	20	9.0	10	5.9	37	16	180	26	84	132
	15	61	5.4	11	4.97	7.1	9.0	91	14	107	83
	22	50	12	12	7.1	130	29	39	12	16	19
	29	24	6.0	28	51	15	5.6	14	33	10	9.0
Aug.	5	7.8	185	7.8	9.0	17	4.97	7.1	7.8	8.4	22
	12	17	118	24	5.9	8.4	9.7	6.5	6.5	23	21
	19	5.9	26	23	12	68	85	6.5	37	14	7.8
	26	7.8	13	7.1	10	41	7.8	12	9.0	6.1	16
Sept.	2	7.1	14	9.0	16	19	10	7.1	6.2	7.8	7.8
	9	51	17	14	10	9.0	6.5	5.9	19	21	57
	16	88	13	6.3	5.1	8.4	5.4	3.62	7.1	6.5	22
	23	8.4	9.0	5.5	4.26	6.1	4.84	3.42	4.39	21	43
	30	6.5	27	11	7.1	8.4	4.45	5.3	18	6.1	47
Oct.	7	5.5	50	9.7	4.46	8.4	4.52	3.42	5.4	5.4	12
	14	5.7	77	7.1	3.49	5.0	5.4	2.97	5.4	5.0	12
	21	6.0	60	16	3.01	4.72	4.84	3.00	7.1	5.3	68
	28	6.5	12	29	8.4	4.78	4.26	17	14	5.7	14
Nov.	4	7.1	12	9.7	4.20	5.2	12	4.39	7.1	5.2	9.7
	11	26	13	8.4	7.1	4.39	5.0	4.13	9.7	8.4	10
	18	36	24	21	4.01	4.78	67	3.88	5.9	5.5	9.0
	25	8.4	13	7.8	27	9.0	9.0	4.65	17	5.2	12
Dec.	2	12	11	16	5.9	5.1	10	4.46	12	6.0	54
	9	9.7	35	8.4	22	4.97	8.4	19	41	7.8	23
	16	19	70	6.5	9.0	5.4	23	8.4	17	6.1	58
	23	10	52	20	7.8	7.8	14	32	17	5.8	16
	31	7.1	30	39	45	17	28	28	30	26	16
Maximum	124	625	191	51	218	85	180	192	144	184	353
Minimum	5.1	5.4	5.5	3.01	4.39	4.26	2.97	4.39	5.0	7.1	4.97

Broad River near Chimney Rock, N. C.

Location. - Water-stage recorder, lat. $35^{\circ}25'35''$, long. $82^{\circ}10'45''$, 1,000 feet downstream from Lake Lure Dam and 3 miles east of Chimney Rock, Rutherford County.

Drainage area. - 97 square miles.

Records available. - March 1927 to September 1945. May 1907 to June 1909 at site at Uree, 1 1/8 miles downstream.

Extremes. - Maximum discharge, 16,800 million gallons per day Aug. 15, 1928 (gage height, 16.8 feet), by computation of flow over Lake Lure Dam; minimum .5 million gallons per day Sept. 13, 1928 (gage height, 0.26 foot).

Remarks. - Large diurnal fluctuation caused by power plant above station. Low and medium flow largely regulated by Lake Lure.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1907													
1908	163	198	152	147	153	132	75	80	77	51	74	120	
1909	191	186	211	168	272	123	171	328	162	223	163	157	178
1927			*105	91.1	63.4	65.2	44.3	38.3	37.5	35.3	41.6	105	
1928	68.5	76.2	86.6	140	148	90.4	105	598	196	115	81.4	73.0	148
1929	98.8	132	269	150	152	108	132	85.3	227	298	213	154	169
1930	136	132	120	100	84.6	61.8	34.8	37.1	45.8	27.5	58.2	64.1	74.9
1931	69.1	48.8	83.3	140	89.1	49.6	42.1	42.7	26.4	21.3	27.1	96.9	61.5
1932	127	100	86.6	83.3	91.7	73.6	41.5	83.3	29.9	157	148	178	101
1933	134	141	126	167	138	68.5	56.3	63.2	84.0	43.9	42.4	45.0	92.4
1934	60.9	67.2	151	102	78.8	120	67.8	83.3	85.3	107	95.6	122	95.1
1935	207	123	125	145	110	64.2	120	120	116	58.6	109	80.1	115
1936	267	183	223	322	125	93.0	73.0	84.6	86.6	359	107	146	172
1937	333	209	138	160	110	77.5	65.2	91.7	112	188	108	94.3	140
1938	102	123	103	95.0	74.3	85.9	97.5	85.3	74.3	40.9	74.9	79.5	85.9
1939	84.0	242	194	107	92.4	66.5	67.8	108	55.8	36.0	32.3	39.3	93.0
1940	48.9	71.1	107	89.8	62.1	55.8	63.9	34.7	135	60.0	79.5	110	103
1941	112	71.7	89.8	125	48.8	34.9	130	63.2	56.3	30.0	39.4	72.4	73.0
1942	65.2	108	154	78.8	201	101	86.6	77.5	116	68.5	58.5	121	103
1943	171	156	141	155	136	96.9	158	72.4	59.2	39.2	46.3	52.6	107
1944	67.2	116	178	165	110	65.9	64.0	73.6	58.1	88.5	59.0	69.8	93.0
1945	80.8	115	121	131	121	43.9	80.8	67.2	259	104	87.9	143	112
Max.	333	242	269	322	272	280	171	598	259	359	213	178	172
Min.	48.9	48.8	83.3	78.8	48.8	34.9	34.8	37.1	26.4	21.3	27.1	39.3	61.5
Mean	129	123	141	136	117	88.9	84.6	125	99.9	102	83.1	101	111

*Period 10 to 31 March 1927

Broad River near Chimney Rock, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1907						588	142	223	556	57	195	397	
1908	627	820	252	310	339	142	459	3490	252	1240	223	310	3490
1909	556	281	426	310	1510	491							
1927			*199	269	160	211	107	112	181	123	240	269	
1928	176	178	182	245	384	183	305	6110	879	324	144	120	6110
1929	183	460	510	255	271	167	346	231	1260	885	344	233	1260
1930	209	252	309	176	180	153	50	96	149	49	239	247	309
1931	286	97	209	278	220	149	96	127	48	101	97	292	292
1932	294	224	205	152	187	208	130	272	97	1360	337	455	1360
1933	225	238	247	672	115	166	126	228	207	96	95	96	672
1934	177	336	527	174	206	386	192	203	394	313	260	404	527
1935	937	214	245	411	175	109	452	486	383	138	652	175	937
1936	1190	388	610	930	201	175	180	244	503	3500	193	406	3500
1937	632	311	189	345	184	162	155	370	407	1510	215	156	1510
1938	155	163	231	161	185	155	297	200	203	91	152	167	297
1939	253	364	365	221	160	106	162	963	111	104	107	99	963
1940	160	228	255	267	156	223	275	4150	360	158	239	346	4150
1941	317	101	232	267	105	102	339	103	160	202	94	151	339
1942	103	267	344	154	866	218	323	159	353	164	105	524	866
1943	354	278	275	384	360	251	347	103	211	94	99	206	384
1944	174	300	397	324	167	159	161	338	140	333	105	107	397
1945	107	333	247	254	333	163	218	120	1000	162	163	304	1000
Max.	1190	820	610	930	1510	588	459	6110	1260	3500	652	524	6110
Min.	103	97	182	152	105	102	50	96	48	49	94	96	292
Mean	356	292	307	312	322	212	193	873	374	524	205	260	1490

*Period 10 to 31 March 1927

Broad River near Chimney Rock, N. C.

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1907						96	57	57	40	48	40	57	
1908	96	96	118	118	118	96	96	118	118	118	142	130	96
1909	118	142	168	142	142	195							
1927			*21	13	4.07	3.04	3.04	2.78	1.49	.77	2.00	2.78	
1928	3.81	4.33	4.33	47	20	2.00	54	63	.52	.65	.77	.71	.52
1929	4.07	3.55	83	45	39	2.26	2.13	3.55	4.07	52	74	59	2.13
1930	37	5.7	4.59	2.78	2.26	2.00	.97	.90	.97	.97	.84	.90	.84
1931	.90	.90	.97	1.10	.90	1.29	.77	.84	.84	1.10	1.10	1.23	.77
1932	1.23	.97	.90	1.23	1.10	1.23	.97	1.62	1.49	1.62	74	39	.97
1933	74	36	45	52	45	1.74	1.62	2.52	1.87	2.26	1.36	1.23	1.23
1934	1.74	1.29	42	45	2.00	46	2.00	2.52	2.78	20	30	48	1.29
1935	72	48	52	81	47	2.00	49	40	1.81	1.55	2.33	3.04	1.55
1936	103	90	74	115	48	1.68	1.55	1.55	1.42	51	1.87	49	1.42
1937	176	107	76	79	48	1.81	1.87	1.87	2.00	2.13	2.00	1.42	1.42
1938	1.68	1.23	.97	1.42	1.42	14	1.68	1.55	1.42	1.81	2.07	1.81	.97
1939	1.81	85	1.94	1.49	1.81	1.81	1.81	1.68	2.07	2.52	2.52	2.39	1.49
1940	2.39	1.68	1.94	1.49	2.39	2.39	2.07	2.71	2.26	2.26	2.39	2.39	1.49
1941	1.49	2.26	1.94	2.26	1.94	2.52	2.26	2.39	2.52	2.07	2.39	2.71	1.49
1942	2.84	2.52	2.39	2.39	2.71	5.5	5.5	5.8	2.52	3.55	4.26	3.68	2.39
1943	8.4	3.29	3.49	3.88	3.29	3.68	5.9	3.88	4.07	4.07	3.49	3.29	3.29
1944	3.10	3.10	2.84	3.29	4.72	4.91	4.01	4.26	5.17	3.55	3.10	3.55	2.84
1945	3.75	3.29	2.84	3.29	3.10	4.26	6.5	4.91	4.46	5.17	4.46	4.46	2.84
Max.	176	142	168	142	142	195	96	118	118	118	142	130	96
Min.	.90	.90	.90	1.10	.90	1.23	.77	.84	.52	.65	.77	.71	.52
Mean	35.7	31.9	33.7	36.3	25.7	22.3	14.3	15.4	9.60	15.5	18.9	19.9	6.57

*Period 10 to 31 March 1927

Broad River near Chimney Rock, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1907	1908	1909		1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan. 7		125	224			70	105	147	106	144	176	70	126
14		293	176			81	95	123	79	171	143	83	420
21		154	225			60	96	141	53	102	112	51	152
28		109	161			61	99	136	47	81	115	46	169
Feb. 4		119	144			54	70	136	50	141	112	49	126
11		125	157			68	141	165	43	96	154	47	99
18		360	178			81	121	126	43	99	131	41	156
25		165	238			85	101	107	50	105	169	43	112
Mar. 4		152	187			72	309	95	76	72	113	253	109
11		140	196			71	249	169	67	92	127	167	110
18		129	253		119	96	353	120	47	59	127	64	172
25		189	208		127	94	258	113	78	103	155	89	114
Apr. 1		155	203			83	102	192	95	169	107	106	216
8		125	168			73	109	142	104	203	97	108	129
15		140	183			78	176	156	118	104	90	112	91
22		143	162			99	125	143	102	110	72	335	127
29		172	159			112	152	147	85	129	63	129	95
May 6		136	194			74	110	174	83	89	98	196	68
13		176	172			68	227	151	97	137	79	172	62
20		96	147	347		54	110	149	96	81	85	112	101
27		94	157	382		57	170	139	70	76	112	94	107
June 3		185	144	240		90	98	132	63	52	73	90	85
10		125	130	353		36	92	120	60	54	47	67	154
17		116	129	273		74	111	116	68	54	112	57	97
24		103	121	235		79	76	85	70	47	87	63	178
July 1		99	103	271		47	95	116	47	33	48	75	68
8		79	181			47	82	96	33	60	48	49	83
15		79	180			52	133	123	36	55	35	52	81
22		74	115			43	79	198	35	37	42	71	47
29		59	220			36	90	116	37	28	45	52	68
Aug. 5		80	130			37	143	127	34	30	94	68	68
12		70	218			43	194	88	35	30	125	45	102
19		82	148			39	1940	81	31	43	56	68	99
26		109	798			37	286	67	48	74	76	48	268
Sept. 2		62	260			32	225	64	37	26	32	98	79
9		62	211			66	583	136	24	39	12	135	51
16		55	155			41	24	92	62	21	29	100	90
23		118	137			30	156	144	43	23	36	57	86
30		78	136			16	1.16584	54	23	45	39	124	65
Oct. 7		57	118			33	48	508	30	14	45	41	140
14		51	186			68	145	180	17	23	29	40	159
21		48	123			21	169	179	36	15	470	57	86
28		50	414			25	132	363	25	17	106	42	125
Nov. 4		56	265			36	36	216	35	39	162	47	72
11		53	176			21	107	212	38	17	176	52	79
18		63	159			68	85	231	117	26	114	33	61
25		114	142			45	81	203	48	34	134	39	105
Dec. 2		66	144			48	81	176	39	31	120	38	209
9		63	162			165	71	171	98	83	79	51	149
16		153	146			90	81	146	59	127	130	39	89
23		123	167			91	74	142	45	113	121	53	100
31		152	157			80	64	162	60	88	377	37	95
Maximum		798			165	1940	584	169	203	470	335	253	420
Minimum		103			16	1.16	64	17	14	12	33	41	45

Broad River near Chimney Rock, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week Ending	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan. 7	259	479	124	59	38	181	79	185	87	90
14	259	230	100	96	47	98	66	102	70	88
21	380	346	91	76	72	98	55	176	66	88
28	222	307	109	72	38	77	66	200	63	61
Feb. 4	167	253	117	190	45	85	65	233	42	56
11	214	225	127	261	38	66	92	193	52	62
18	205	195	118	297	59	78	130	162	156	134
25	151	212	123	199	129	71	128	103	164	172
Mar. 4	142	158	85	287	84	64	63	103	166	130
11	133	152	147	266	91	106	208	103	128	110
18	193	136	69	191	94	87	211	129	122	81
25	207	120	96	125	60	66	129	198	201	101
Apr. 1	417	118	115	99	195	125	134	140	276	182
8	532	195	108	103	85	167	92	105	192	132
15	367	147	88	127	67	85	85	141	138	83
22	225	134	107	97	87	87	79	207	127	133
29	189	171	78	118	116	160	50	179	204	189
May 6	158	132	60	90	70	54	73	88	140	110
13	147	114	65	118	89	39	67	179	96	238
20	129	118	68	89	50	49	289	141	85	136
27	99	99	68	76	50	56	364	163	98	74
June 3	91	85	123	78	48	50	150	101	106	3.88
10	113	89	69	81	57	11	78	80	98	5.0
17	99	98	69	69	66	48	163	79	77	51
24	85	61	99	62	81	50	89	74	65	80
July 1	68	55	87	39	18	32	71	144	6.3	52
8	86	61	58	90	41	141	57	163	83	58
15	52	61	57	85	41	128	59	232	72	125
22	83	51	121	61	122	196	43	156	64	68
29	56	76	158	48	56	88	181	95	55	74
Aug. 5	104	88	118	45	39	57	74	89	143	70
12	117	60	115	70	92	65	69	88	56	56
19	68	91	83	224	988	61	105	88	48	70
26	57	96	58	96	172	69	85	67	49	81
Sept. 2	82	189	51	70	361	61	71	42	62	59
9	81	158	104	56	214	50	196	42	43	165
16	77	101	92	50	90	48	116	43	73	264
23	59	76	59	75	79	51	61	113	48	528
30	139	59	49	41	98	76	92	49	61	144
Oct. 7	154	94	43	52	39	67	61	41	109	131
14	380	52	50	33	47	23	86	42	48	89
21	833	391	39	32	67	2.60	69	37	122	89
28	162	242	41	26	54	17	63	38	98	115
Nov. 4	130	138	40	32	141	39	68	45	48	72
11	110	98	106	34	54	45	56	52	48	75
18	113	119	67	34	85	45	56	47	59	103
25	101	111	65	39	55	38	56	39	61	89
Dec. 2	89	85	82	37	79	38	61	45	82	107
9	138	109	56	37	67	78	109	41	70	122
16	121	72	66	31	64	68	82	41	83	133
23	145	91	107	37	92	55	70	38	68	182
31	194	96	83	41	218	91	221	86	50	145
Maximum	833	479	158	297	988	196	364	233	276	528
Minimum	52	51	39	26	18	2.60	43	37	6.3	3.88

Broad River near Boiling Springs, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}12'35''$, long. $81^{\circ}41'55''$, half a mile upstream from Sandy Run Creek and $3\frac{1}{2}$ miles southwest of Boiling Springs, Cleveland County.

Drainage area.- 864 square miles.

Records available.- June 1925 to December 1945.

Average discharge.- 20 years, 913 million gallons per day.

Extremes.- Maximum discharge, 47,350 million gallons per day Aug. 16, 1928 (gage height, 24.3 feet, present datum); minimum, 39 million gallons per day (regulated) July 21, 1940 (gage height, 1.06 feet).

Remarks.- Considerable diurnal fluctuation and some regulation caused by power plant above station.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1925						*360	371	284	231	349	539	424	
1926	982	995	782	736	497	330	506	525	419	264	519	609	594
1927	526	801	840	762	472	552	629	-----	344	326	404	995	-----
1928	568	717	840	950	1047	872	924	4044	1789	1021	762	685	1189
1929	846	1389	2351	1124	1344	1008	950	659	1751	2377	1602	1176	1382
1930	1111	1098	1059	879	711	525	379	322	331	277	497	749	659
1931	866	551	788	1266	943	527	547	599	275	234	270	1305	685
1932	1602	859	879	788	743	808	475	859	353	1634	1583	1705	1030
1933	1273	1337	1150	1130	1150	628	585	724	605	390	432	538	825
1934	672	698	1705	1098	762	1092	536	736	775	1210	738	922	913
1935	1731	1034	1140	1081	880	628	966	823	653	410	842	612	900
1936	2693	1619	1725	2923	868	713	652	831	676	2321	703	1145	11406
1937	3068	1709	1183	1254	942	771	720	890	1054	1731	816	802	1244
1938	862	784	933	787	727	776	1028	834	572	395	547	572	735
1939	683	2064	1468	913	800	605	597	1021	402	351	333	368	793
1940	529	721	665	691	488	596	468	2301	720	472	616	680	747
1941	688	530	707	827	443	397	1280	638	376	304	391	672	606
1942	606	1200	1309	691	1339	908	703	723	857	531	483	1205	879
1943	1610	1189	1174	1146	978	760	1298	636	481	429	557	543	899
1944	852	1337	1910	1607	942	834	690	605	613	715	587	636	943
1945	603	942	948	948	791	458	772	571	2003	672	692	1537	910
Max.	3068	2064	2351	2923	1344	1092	1298	4044	2003	2377	1602	1705	11406
Min.	526	530	665	691	443	330	371	284	231	234	270	368	594
Mean	1119	1079	1178	1080	843	674	718	931	728	782	663	851	913

*26-30 June 1925

Broad River near Boiling Springs, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1925						*452	788	788	496	1370	2620	552	
1926	5450	2520	1730	1120	1190	404	3010	1410	1120	840	2200	2330	5450
1927	982	2520	2140	3020	833	749	2140	---	636	665	1490	3220	---
1928	917	2010	1270	1880	2130	2620	2470	33100	5980	1650	982	917	33100
1929	1270	6260	5370	1800	2310	1350	2100	1430	12100	18400	3320	1680	16400
1930	1450	2130	2130	1190	982	782	590	472	514	412	1090	2200	2430
1931	2780	756	1560	3200	2110	833	1150	1690	402	373	405	4810	4810
1932	5520	1270	3160	1340	1340	1820	879	2450	698	14300	8200	3850	14300
1933	2040	3180	---	---	3410	872	937	2380	1260	711	558	963	3410
1934	1210	3040	5960	2070	1630	2300	840	1660	3420	5790	2280	2290	5960
1935	6100	2130	3660	2290	1350	956	2140	2450	1710	977	3370	1210	6100
1936	8590	4120	6590	12500	1180	1070	1170	2620	2910	14000	988	5690	14000
1937	10500	2510	1520	1810	1400	1400	1900	2340	4840	11200	1040	1170	11200
1938	1470	950	1810	1020	3750	1230	3120	1930	988	672	1160	2450	3750
1939	2330	4520	4240	1810	1290	924	1240	6460	614	623	457	704	6460
1940	1370	2450	1160	1030	711	2000	1510	31700	1910	1160	1810	1850	31700
1941	1130	724	1420	2130	646	885	5170	1180	608	545	639	1580	5170
1942	898	7110	5260	982	5510	2450	1650	1680	4220	736	608	7750	7750
1943	8980	2950	3160	3190	1910	1430	5270	1950	1270	525	1940	1940	6980
1944	2580	4520	6650	3310	1360	1710	1210	1940	14200	2520	1470	930	6650
1945	775	2420	2260	1680	1300	613	3830	911	15600	1010	1400	1470	15600
Max.	10500	7110	6650	12500	5510	2620	5270	33100	15600	18400	8200	7750	33100
Min.	775	724	1160	982	646	404	590	472	402	373	405	552	2430
Mean	3320	2900	3230	2490	1820	1280	2070	5030	3120	3740	1810	2490	10800

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1925						*297	233	174	150	194	297	359	
1926	381	526	404	501	388	278	210	194	213	161	181	236	161
1927	317	258	477	428	291	297	213	---	213	---	---	313	---
1928	355	401	425	552	501	552	552	607	814	756	552	501	355
1929	607	526	1050	853	698	724	552	475	425	698	814	814	425
1930	756	724	636	552	449	355	256	211	183	183	275	338	183
1931	475	401	425	581	501	309	256	294	174	160	186	275	160
1932	495	532	464	485	556	415	275	271	202	249	717	646	202
1933	724	672	---	---	594	410	324	333	229	242	275	309	229
1934	378	378	581	579	430	426	342	368	374	454	454	554	342
1935	736	645	628	724	646	392	351	386	261	208	268	348	208
1936	672	743	749	1050	597	421	359	488	330	538	122	526	330
1937	1230	1210	808	879	640	525	345	496	430	484	555	545	345
1938	591	537	556	495	424	166	282	362	269	213	360	291	213
1939	388	904	672	517	494	323	306	401	250	198	218	242	198
1940	262	410	388	440	355	239	238	113	305	251	323	323	113
1941	397	357	354	420	258	130	391	291	191	101	233	282	101
1942	365	494	605	438	381	150	293	397	315	290	339	360	290

*26-30 June 1925

Broad River near Boiling Springs, N. C.

Minimum Discharge in Million Gallons per day (continued)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1943	531	619	543	609	499	367	652	319	233	275	291	296	233
1944	421	385	665	930	532	428	452	323	307	351	351	397	307
1945	355	355	517	487	436	302	324	301	275	385	379	539	275
Max.	1230	1210	1050	1050	698	724	652	607	814	756	814	814	425
Min.	262	258	354	420	258	130	210	113	150	101	181	236	101
Mean	522	554	576	606	484	386	343	340	293	320	374	404	246

*26-30 June 1925

Broad River near Boiling Springs, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	
Jan.	7		1,64	736	711	840	1200	1150	2320	1630	717
	14		445	508	567	943	1010	988	2330	1340	872
	21		2160	429	539	814	1200	743	1140	1050	638
	28		963	461	519	775	1030	637	827	1190	533
Feb.	4		1190	433	514	743	1100	659	1060	1000	525
	11		1120	395	558	1460	1390	567	846	1600	523
	18		614	546	632	1050	1030	512	808	1270	489
	25		879	1680	1000	1210	943	531	924	1460	467
Mar.	4		911	775	749	2980	911	743	685	1030	2490
	11		1010	1120	691	2630	1410	782	891	1300	2000
	18		820	879	885	2750	1040	595	589	1160	904
	25		659	711	969	2090	1010	730	1200	1290	859
Apr.	1		691	685	872	1600	885	1350	1030	885	216
	8		678	542	736	1080	982	1830	885	1010	911
	15		930	573	1190	1160	898	963	853	943	1160
	22		724	1180	808	1180	853	840	665	1570	1460
	29		594	775	1140	1070	782	1240	711	1050	898
May	6		539	587	808	1220	711	801	859	1400	698
	13		584	471	1430	1160	795	1150	685	1510	646
	20		521	427	937	1510	775	749	665	1050	975
	27		422	391	1110	1240	614	1170	808	801	711
June	3		367	555	846	1450	544	691	597	782	917
	10		328	467	891	1010	532	550	546	597	1620
	17		320	592	930	950	550	581	1260	585	885
	24		351	623	665	969	543	1483	859	535	1160
July	1		309	486	1020	1070	526	435	625	743	583
	8	477	249	395	711	1060	327	724	515	522	532
	15	374	245	879	1160	911	364	646	468	528	594
	22	310	258	917	672	1110	421	441	410	691	494
	29	355	736	471	1150	795	339	445	523	604	534
Aug.	5	359	1370	-----	782	672	375	1440	1290	672	516
	12	324	510	-----	3260	665	317	711	1270	507	730
	19	286	353	-----	11200	762	290	453	580	1050	711
	26	215	552	-----	1940	614	371	853	638	597	644
Sept.	2	205	321	326	1350	525	276	395	315	788	1010
	9	202	390	407	3250	891	267	326	375	840	517
	16	207	672	317	1550	618	394	260	266	624	930
	23	182	371	380	1550	1300	339	249	326	506	969
	30	333	290	271	950	4560	362	233	461	349	711
Oct.	7	246	245	233	911	5770	272	202	413	368	1180
	14	249	214	475	937	1010	245	242	405	326	2440
	21	410	246	333	1160	924	271	230	4880	474	846
	28	504	366	307	1140	2240	269	216	1180	413	612
Nov.	4	391	280	260	911	1430	367	299	2480	375	704
	11	353	335	306	833	1390	439	237	1320	481	724
	18	950	808	561	616	2020	704	271	1010	404	531
	25	487	537	445	730	1650	511	307	1170	429	642
Dec.	2	377	533	455	749	1310	395	262	1470	425	1440
	9	388	411	1800	711	1290	1090	1110	872	512	1110
	16	411	513	866	724	1070	635	1860	1480	470	749
	23	449	417	950	724	1190	625	1480	1290	634	859
	31	459	1040	510	575	1180	736	1090	3130	570	685
Maximum			2160		11200	5770	1110	1860	1880	1630	2490
Minimum			214		514	525	245	202	266	326	467

Broad River near Boiling Springs, N. C.

Mean Weekly Discharge in Million Gallons per day (continued)

Week Ending	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	7 1120	3970	5220	911	568	357	911	730	1300	1250	678
	14 2980	2250	1590	879	665	464	629	585	872	646	637
	21 1250	3600	3570	762	685	769	626	546	1570	1010	590
	28 1810	1580	2290	937	536	520	616	549	2300	636	568
Feb.	4 988	1400	2130	840	1810	578	545	609	1820	565	475
	11 917	2070	1830	808	2320	512	511	943	1710	678	480
	18 1370	1760	1550	736	2240	565	570	1990	1100	2080	1100
	25 950	1360	1660	814	1250	1250	516	1150	879	1490	1510
Mar.	4 859	1100	1410	762	3060	610	503	846	762	1360	911
	11 911	1030	1250	1030	1760	618	801	2220	808	1390	904
	18 1840	1360	1190	975	1180	788	672	1230	969	1080	711
	25 995	1540	1130	904	937	563	589	1030	1930	2530	866
Apr.	1 988	3400	982	853	917	711	930	963	1210	3180	1380
	8 1070	6590	1250	885	859	641	1280	769	943	1440	911
	15 975	2610	1310	814	762	685	769	756	846	1850	736
	22 1150	1540	1060	814	795	717	572	636	1670	1430	885
	29 1170	1300	1130	659	1210	730	717	596	1160	1660	1230
May	6 870	1050	1070	548	846	572	498	608	866	1140	943
	13 904	924	963	561	975	526	475	557	950	950	833
	20 930	885	1000	672	749	457	429	1740	911	885	924
	27 885	749	859	594	724	424	384	2510	1300	956	652
June	3 762	672	853	1380	775	429	390	943	795	769	499
	10 704	833	801	820	730	448	304	1030	827	1130	476
	17 628	775	833	672	584	859	552	1250	808	930	477
	24 590	691	743	788	530	672	355	704	610	717	444
July	1 517	573	625	665	441	455	439	652	840	540	408
	8 672	659	665	455	730	309	1100	678	1270	808	483
	15 808	636	609	491	659	492	1310	570	2340	730	1070
	22 1430	659	559	1430	517	698	2310	514	943	704	808
	29 1070	497	846	1720	529	416	685	1050	808	581	775
Aug.	5 659	833	898	1090	499	256	756	625	678	988	775
	12 601	1120	659	1320	665	340	659	711	641	586	579
	19 552	691	743	724	2050	7490	483	1010	904	457	526
	26 1470	840	1120	580	1000	917	678	691	506	457	568
Sept.	2 743	711	1380	491	597	1760	550	550	449	526	427
	9 1010	685	1760	808	457	891	425	1560	439	452	672
	16 691	573	1050	558	377	659	357	788	391	522	1400
	23 503	585	678	475	382	575	317	528	627	490	5510
	30 468	891	601	463	353	516	393	619	468	982	898
Oct.	7 371	1120	866	484	461	484	298	550	426	808	736
	14 365	3220	685	390	311	411	264	501	446	479	685
	21 371	4430	3730	355	346	458	301	488	422	1030	604
	28 382	1100	1820	392	311	368	307	578	417	678	711
Nov.	4 545	820	1120	364	340	846	457	529	430	481	574
	11 630	762	840	665	315	452	403	507	885	517	566
	18 1670	782	769	474	289	827	340	477	484	525	631
	25 665	646	762	625	373	443	391	483	480	490	879
Dec.	2 672	639	808	468	339	536	361	541	439	904	775
	9 544	788	820	464	337	466	782	969	430	704	1830
	16 775	762	724	443	334	526	560	749	425	711	1020
	23 632	1170	704	420	337	691	566	586	416	587	924
	31 545	1610	924	943	453	1050	846	2450	872	525	2450
Maximum	2980	6590	5220	1720	3060	7490	2310	2510	2340	3180	5510
Minimum	365	497	601	355	289	256	264	477	391	452	408

Green River near Mill Spring, N. C.

Location. - Water-stage recorder, lat. $35^{\circ}20'10''$, long. $82^{\circ}04'50''$, at abandoned ford $1\frac{1}{2}$ miles northeast of Pea Ridge Church, 2 miles downstream from Walnut Creek, and $5\frac{1}{4}$ miles northeast of Mill Spring, Polk County.

Drainage area. - 174 square miles.

Records available. - December 1939 to December 1945.

Extremes. - Maximum discharge 6,970 million gallons per day Aug. 13, 1940 (gage height, 22.15 feet), by computation of flow over dam; minimum, 16 million gallons per day (regulated) July 6, 1940 (gage height, 1.42 feet); minimum daily 16 million gallons per day (regulated) July 6, 1940.

Maximum stage known, 24.2 feet sometime in July 1916, from flood-crest reference mark placed by local resident.

Remarks. - Large diurnal fluctuation caused by power plants above station; considerable regulation by Lake Summit and Turner Reservoirs (combined usable storage, 264,455,000 cubic feet).

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1939													
1940	123	166	136	209	150	123	118	452	231	113	122	147	179
1941	213	150	191	236	137	111	246	178	122	101	93.7	171	163
1942	158	297	375	202	463	234	191	193	218	158	132	318	245
1943	360	350	320	354	285	217	360	196	149	133	136	138	249
1944	203	294	441	439	284	209	158	131	126	151	186	160	231
1945	175	242	298	286	231	132	193	184	411	204	196	368	244
Max.	360	350	441	439	463	234	360	452	411	204	196	368	249
Min.	123	150	136	202	137	111	118	131	122	101	93.7	138	163
Mean	205	250	294	288	258	171	211	222	210	148	141	211	219

Green River near Mill Spring, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1939													
1940	190	464	198	475	216	330	322	3150	526	335	200	629	3150
1941	166	220	553	490	239	243	698	464	232	192	236	350	698
1942	284	1180	1560	347	1850	565	295	361	659	268	202	1900	1900
1943	782	672	698	969	581	362	879	477	257	233	207	268	969
1944	523	614	1160	730	460	320	242	266	240	297	362	284	1160
1945	266	704	749	473	454	236	398	425	2020	373	465	801	2020
Max.	782	1180	1560	969	1850	565	879	3150	2020	373	465	1900	3150
Min.	190	220	198	347	216	236	242	266	232	192	200	268	698
Mean	418	612	820	581	633	343	472	857	656	283	279	647	1650

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1939													
1940	26	26	29	30	27	20	16	22	28	25	25	25	16
1941	33	28	29	34	22	19	23	28	23	17	21	24	17
1942	26	30	52	36	32	48	31	42	35	25	25	25	25
1943	41	82	78	41	70	28	50	39	28	31	32	25	25
1944	35	31	87	70	65	41	36	31	30	39	34	32	30
1945	37	30	62	39	52	23	25	32	36	37	37	39	23
Max.	41	82	87	70	70	48	50	42	36	39	37	39	30
Min.	26	26	29	30	22	19	16	22	23	17	21	24	16
Mean	33	38	56	42	45	30	30	32	30	29	29	30	23

Green River near Mill Spring, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1939	1940	1941	1942	1943	1944	1945				
Jan. 7		88	302	182	373	241	180				
14		108	187	167	283	161	189				
21		138	172	144	376	274	157				
28		140	194	144	398	163	167				
Feb. 4		134	150	141	404	167	145				
11		126	153	253	433	156	157				
18		148	151	403	357	377	253				
25		255	149	346	286	327	371				
Mar. 4		142	147	252	218	354	269				
11		140	191	542	229	335	283				
18		145	212	382	295	328	229				
25		138	158	329	419	536	247				
Apr. 1		141	263	293	382	704	437				
8		165	302	244	311	422	325				
15		202	262	207	233	435	251				
22		270	171	176	512	391	242				
29		200	202	182	350	508	322				
May 6		182	160	162	295	342	303				
13		139	159	145	257	305	198				
20		138	139	84	307	257	278				
27		141	114	775	334	252	200				
June 3		127	104	278	260	239	163				
10		107	113	245	248	249	163				
17		79	127	271	206	216	143				
24		193	112	204	170	183	96				
July 1		121	116	189	267	141	121				
8		40	213	214	457	148	87				
15		143	309	170	492	193	184				
22		184	297	152	255	168	222				
29		125	185	213	238	147	239				
Aug. 5		84	217	203	224	169	290				
12		103	192	177	224	122	194				
19		1270	165	207	233	112	151				
26		200	168	213	160	116	167				
Sept. 2		519	150	179	156	130	140				
9		264	122	318	149	103	253				
16		211	101	229	133	121	382				
23		213	140	172	149	158	866				
30		156	113	156	153	121	253				
Oct. 7		196	101	197	153	158	220				
14		151	60	151	156	145	200				
21		64	140	143	123	158	187				
28		141	72	149	124	149	208				
Nov. 4		140	142	143	126	181	163				
11		141	123	140	148	184	174				
18		134	78	136	139	196	179				
25		109	72	143	120	163	231				
Dec. 2		110	113	120	132	183	214				
9		112	189	225	118	164	433				
16		120	153	217	133	205	318				
23		152	156	193	130	151	223				
31	110	315	182	631	157	117	866				
Maximum		1270	309	775	512	704	866				
Minimum		40	60	84	118	103	87				

Lake Summit Reservoir at Tuxedo, N. C.

Location.— Reservoir formed by dam on Green River, lat. $35^{\circ}14'00''$, long. $83^{\circ}23'55''$, $1\frac{3}{4}$ miles east of Tuxedo, Henderson County and $4\frac{3}{4}$ miles upstream from Hungry River.

Drainage area.— 42 square miles.

Records available.— February 1934 to December 1945.

Remarks.— Reservoir first put in use June 1920 has a total storage capacity of 444,500,000 cubic feet below gage height of 100 feet (top of dam) and a storage capacity under normal operation of 185,000,000 cubic feet between gage heights of 100 and 85 feet. Surface area at maximum design level, 324 acres. Reservoir used for power. Records of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934	---	+7.9	+20	-14	+8.5	+5.7	-11	+2.19	+7.0	-36	+18	+12
1935	+11	-8.3	+7.8	+2.44	+.34	-14	-.94	-4.70	-8.6	-14	+8.1	+5.1
1936	+25	-6.2	+8.9	+1.74	-.34	-.35	+.34	-13	-53	+47	-6.4	+17
1937	+5.4	-1.50	-9.8	+1.00	-.96	-1.02	-.65	+5.5	-12	+15	-4.7	-3.91
1938	+4.56	-2.16	-4.82	-11	+15	-5.3	+8.4	-2.60	-30	-13	+12	+11
1939	+29	+2.24	-10	0	-.68	-5.0	-.94	+2.87	0	-7.3	-3.44	+1.50
1940	-13	+21	+9.7	0	-8.8	+3.02	-4.49	+17	-63	-10	+23	+47
1941	-12	+1.44	+3.91	-7.0	+1.25	-7.7	+.89	+6.9	-26	-24	+4.51	+50
1942	-.65	-.72	-.65	+2.02	+5.6	-1.40	-7.5	+2.92	+2.04	-2.60	+1.35	+8.3
1943	-1.35	-20	+16	-22	+20	+1.74	-4.62	-1.30	-7.7	-20	+2.29	+26
1944	-11	+3.02	+16	-13	-7.3	+8.2	-.96	-7.9	+4.84	+.63	-18	+10
1945	+6.5	+14	+1.35	-6.8	-6.1	+6.3	+7.2	-5.9	+3.69	-9.7	-.32	+14

Turner Shoals Reservoir near Mill Spring, N. C.

Location.- Reservoir is formed by dam on Green River, lat. $35^{\circ}20'10''$, long. $82^{\circ}11'15''$, three-quarters of a mile upstream from Bullin Creek and 3 miles north northwest of Mill Spring, Polk County.

Drainage area.- 126 square miles.

Records available.- February 1934 to December 1945.

Remarks.- Reservoir, first put in use June 1925, has a total storage capacity of 519,547,000 cubic feet below gage height 100 feet (top of dam) and storage capacity under normal operation of 153,875,000 cubic feet between gage heights 100 and 91.0 feet. Surface area at maximum design level 438 acres. Reservoir used for power. River also affected by storage in Lake Summit Reservoir upstream having a storage capacity under normal operation of 185,000,000 cubic feet. Records of change in contents computed from data furnished by Duke Power Company.

Monthly Change in Contents in Equivalent Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December
1934	-1.8	-0.8	+5.6	-4.2	+6.1	-1.7	-6.7	+13.6	-6.9	+5.7	+1.3	
1935	-6.9	-0.9	+12.3	-6.5	-0.4	-1.3	-3.0	-0.4	-3.5	-2.5	+11.8	-5.2
1936	-3.0	+13.0	-2.2	-10.7	+9.0	-8.0	-3.7	+9.3	+8.3	-7.6	+0.9	+16.1
1937	-4.7	-3.6	-12.0	-3.0	+6.0	-8.3	+7.6	+5.7	-15.1	+11.9	-3.6	-7.2
1938	+6.3	+6.8	-4.8	-3.1	+5.6	-9.3	+15.3	-14.9	+4.4	-5.5	+2.6	+10.0
1939	-2.2	+13.2	-10.6	+5.2	-8.1	-8.0	0	+6.4	-4.0	-4.6	-0.4	+2.9
1940	+2.1	+5.1	+4.9	-2.8	-10.7	+3.0	-1.3	+16.3	-2.8	-18.5	+9.0	+8.3
1941	-9.2	-2.8	+6.8	-2.2	-5.9	+1.7	+3.8	-3.0	-4.3	+1.6	+9.7	-2.6
1942	+3.5	-6.3	+6.1	-2.3	+7.2	-3.3	-0.4	-6.6	+7.7	-11.3	+2.5	+12.0
1943	-0.9	-2.5	-2.2	-6.8	+3.5	+5.5	-3.6	-6.5	-0.4	-0.8	-3.0	+8.5
1944	+1.7	+0.5	+5.4	+0.5	-3.6	-15.4	+2.1	-0.4	+10.5	-0.4	-0.9	+4.9
1945	-5.3	+7.3	-2.2	0	-4.4	-4.4	+7.8	-4.8	+8.2	-3.1	-1.8	+9.9

Second Broad River at Cliffside, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}14'15''$, long. $81^{\circ}46'25''$, at Cliffside, Rutherford County, 2 miles upstream from mouth.

Drainage area.- 211 square miles.

Records available.- June 1925 to December 1945.

Average discharge.- 20 years, 191 million gallons per day.

Extremes.- Maximum discharge, 9,690 million gallons per day August 14, 1940 (gage height, 17.93 feet), by computation of flow over dam; minimum 2.58 million gallons per day (regulated) July 24, 1943.

Records.- Considerable diurnal fluctuation and some regulation caused by mills above station.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1925										79.5	115	84.6	
1926	242	229	186	152	100	67.2	139	129	73.0	43.2	91.1	109	129
1927	95.6	208	183	149	81.4	95.0	162	93.0	85.3	68.5	82.7	222	127
1928	125	158	172	197	185	149	141	917	333	160	123	122	233
1929	159	308	484	209	272	178	173	137	397	599	324	237	290
1930	202	228	240	174	161	125	91.7	82.7	82.7	77.5	130	183	148
1931	186	114	176	302	229	107	128	204	63.0	51.0	61.6	371	167
1932	447	182	197	162	134	124	82.0	207	69.8	323	384	424	229
1933	256	293	257	216	242	114	120	164	132	100	101	117	175
1934	144	163	396	225	133	272	123	184	199	315	159	187	208
1935	327	217	259	240	169	114	201	109	101	80.0	150	118	174
1936	625	334	390	674	172	141	137	270	138	408	107	233	303
1937	764	328	217	250	187	154	147	181	173	403	154	152	260
1938	178	149	204	150	160	150	243	168	87.9	76.2	122	123	151
1939	175	473	295	215	144	105	123	171	64.0	64.6	64.3	79.5	163
1940	109	136	132	135	84.0	111	80.1	516	93.7	769	117	133	144
1941	119	98.2	142	151	82.7	78.8	414	125	70.4	54.3	69.8	134	129
1942	120	284	291	141	218	216	145	136	178	93.0	91.1	287	183
1943	368	221	247	205	202	144	272	116	89.8	80.8	127	120	183
1944	196	283	477	356	201	205	130	103	115	182	135	154	211
1945	147	243	213	201	153	95.6	151	104	568	116	133	360	207
Max.	764	473	484	674	272	272	414	917	568	769	384	424	303
Min.	95.6	98.2	132	135	81.4	67.2	80.1	82.7	63.0	43.2	61.6	79.5	127
Mean	249	233	258	225	166	137	160	206	156	197	135	188	191

Second Broad River at Cliffside, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1925										309	573	143	
1926		607	443	261	273	110	1080	600	229	101	298	342	
1927	149	730	607	621	172	138	582	193	179	155	258	866	866
1928	278	474	328	522	394	394	449	8530	982	256	177	180	8530
1929	278	1490	1590	326	533	419	364	352	3520	6210	943	401	6210
1930	317	483	591	307	226	199	146	160	151	119	327	590	591
1931	801	145	371	1160	872	153	309	749	96	112	98	1480	1180
1932	1910	359	775	281	472	329	180	937	156	3090	2650	1410	3090
1933	388	808	568	-----	969	155	273	505	291	156	155	225	-----
1934	288	840	1840	568	185	1080	253	618	1220	2230	672	659	2230
1935	1210	598	1230	769	278	216	637	211	263	269	594	255	1230
1936	2330	1250	1870	4030	256	315	359	1680	602	2140	157	1300	4030
1937	2650	585	259	505	316	447	410	762	637	3890	231	288	3890
1938	399	199	463	211	1130	328	795	576	176	114	377	571	1130
1939	617	1300	1180	736	273	196	361	1170	116	206	100	186	1300
1940	424	492	196	212	142	685	234	7750	271	167	408	388	7750
1941	194	149	321	486	164	252	1710	349	130	180	132	443	1710
1942	214	1720	1380	278	769	1220	604	641	1350	224	142	2360	2360
1943	2400	704	917	691	756	368	1650	615	317	236	601	486	2400
1944	665	995	1900	904	455	711	354	291	1060	937	452	258	1900
1945	247	665	585	415	245	150	904	212	5240	158	295	1490	5240
Max.	2650	1720	1900	4030	1130	1220	1710	8530	5240	6210	2650	2360	8530
Min.	149	145	196	211	142	110	146	160	96	101	98	143	591
Mean	829	730	871	699	444	393	583	134	849	1010	459	682	3110

Second Broad River at Cliffside, N. C.

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1925										21	23	36	
1926		85	61	59	23	14	14	34	17	17	20	26	—
1927	26	23	74	41	12	16	23	25	25	23	26	63	12
1928	32	50	73	94	85	56	28	41	93	56	77	78	28
1929	93	94	213	132	165	89	48	78	69	152	177	177	48
1930	130	159	108	121	103	50	26	19	25	23	28	82	19
1931	73	50	90	123	88	27	47	70	17	7.1	9.0	72	7.1
1932	117	111	99	60	26	39	9.0	12	12	16	156	100	9.0
1933	187	176	176	---	119	52	13	52	59	47	52	52	13
1934	50	63	113	127	61	79	48	54	70	91	81	100	48
1935	151	138	146	105	96	70	78	67	26	43	57	67	26
1936	116	167	148	192	98	82	79	114	50	49	67	88	49
1937	245	229	171	146	118	85	38	70	65	57	70	104	38
1938	110	94	108	96	78	63	36	60	25	30	70	35	25
1939	90	171	145	90	76	49	34	25	22	7.1	21	34	7.1
1940	31	50	56	99	7.1	3.88	13	5.8	7.8	8.4	61	44	3.88
1941	63	59	54	78	28	5.2	83	41	26	5.2	23	25	5.2
1942	59	78	139	72	59	67	36	33	77	50	58	75	33
1943	88	109	106	106	101	71	74	54	7.8	30	60	59	7.8
1944	92	79	140	185	130	98	72	58	45	78	72	102	45
1945	93	85	129	104	115	59	49	45	71	70	60	107	45
Max.	245	229	213	192	165	98	83	114	93	152	177	177	49
Min.	26	23	54	41	7.1	3.88	9.0	5.8	7.8	5.2	9.0	25	3.88
Mean	97	104	117	107	79	54	42	48	40	42	60	73	24

Second Broad River at Cliffside, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Jan.		90	116	160	164	211	309	730	291	158	239	1000
	14	94	96	129	177	173	195	724	278	186	494	443
	21	612	85	112	153	253	140	258	216	122	186	872
	28	207	89	110	147	185	125	163	258	117	444	345
Feb.	4	283	90	109	138	201	116	222	196	130	174	327
	11	219	83	125	362	300	113	167	362	125	165	483
	18	129	129	125	202	205	112	161	274	99	333	330
	25	214	466	232	261	194	118	214	334	93	200	241
Mar.	4	242	198	151	744	196	156	153	207	678	176	"
	11	247	297	142	591	339	172	208	234	417	184	184
	18	209	194	189	511	250	138	136	287	158	501	257
	25	143	127	191	396	236	152	276	324	165	189	331
Apr.	1	158	110	201	271	141	349	210	209	630	217	863
	8	152	105	143	203	193	517	179	219	187	237	1740
	15	194	98	224	207	183	191	194	190	262	193	551
	22	144	241	153	215	169	173	139	266	295	287	266
	29	110	161	260	202	160	258	130	197	163	247	248
May	6	101	112	170	256	158	135	196	324	135	167	205
	13	124	94	264	230	179	226	132	312	132	180	182
	20	105	62	149	317	184	154	107	207	149	179	173
	27	81	60	188	237	145	435	117	158	121	177	156
June	3	79	89	129	282	127	142	83	148	231	137	131
	10	69	90	159	175	140	115	78	119	507	128	164
	17	59	96	174	154	113	116	194	119	160	106	154
	24	65	110	109	180	136	90	139	97	247	113	127
July	1	68	79	171	194	107	101	99	112	113	88	117
	8	50	81	94	193	93	195	98	112	122	152	134
	15	50	196	151	168	78	149	69	109	138	192	142
	22	38	324	100	187	106	85	62	147	96	280	131
	29	214	96	200	150	82	94	101	116	117	220	105
Aug.	5	473	90	125	134	112	123	334	147	92	107	186
	12	125	100	1050	137	85	288	322	104	155	107	468
	19	67	83	2410	157	83	143	138	234	221	110	187
	26	112	104	385	144	78	309	98	116	118	127	243
Sept.	2	65	70	204	105	70	84	69	224	317	92	229
	9	90	96	600	183	66	75	91	156	107	151	146
	16	79	94	302	112	91	59	64	134	256	107	122
	23	68	93	299	270	79	57	50	117	282	76	107
	30	56	59	173	1110	91	55	72	93	154	75	179
Oct.	7	54	54	52	147	1780	72	40	74	101	317	73
	14	43	53	95	135	200	71	57	74	89	743	65
	21	101	48	75	180	196	82	44	1000	106	163	72
	28	129	28	61	178	417	79	47	167	114	116	74
Nov.	4	63	26	68	136	223	90	71	775	103	138	121
	11	72	60	70	129	230	107	57	242	101	129	143
	18	225	145	106	121	479	208	63	178	85	113	268
	25	102	103	83	121	350	125	70	264	103	133	107
Dec.	2	80	87	.96	124	247	107	64	357	101	336	107
	9	83	67	429	110	271	281	340	161	93	203	96
	16	79	106	187	126	199	147	522	362	83	143	159
	23	100	110	191	127	247	130	412	292	154	149	110
	31	77	154	115	125	230	189	305	879	139	150	107
Maximum		612	466	2410	1780	339	522	1000	362	743	501	1740
Minimum		26	52	94	105	66	40	50	83	92	65	100

Second Broad River at Cliffside, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1937	1938	1939	1940	1941	1942	1943	1944	1945			
Jan. 7	1350	185	155	77	144	155	225	306	181			
14	375	174	160	118	114	109	140	149	161			
21	995	143	163	166	114	111	381	239	134			
28	455	206	136	85	108	105	576	125	124			
Feb. 4	447	171	512	87	99	136	445	108	112			
11	360	136	530	102	93	235	381	147	110			
18	295	136	514	110	111	529	181	448	303			
25	306	162	218	232	96	225	143	290	381			
Mar. 4	246	161	717	128	87	167	129	309	246			
11	226	233	337	123	183	592	142	277	198			
18	211	239	213	158	121	216	191	227	157			
25	214	199	174	123	113	202	471	685	193			
Apr. 1	199	162	165	141	180	200	244	859	293			
8	265	178	158	128	244	148	156	269	178			
15	251	167	140	139	135	173	145	432	138			
22	198	143	151	136	105	129	325	359	189			
29	300	120	404	132	130	114	199	373	293			
May 6	210	106	200	101	96	127	152	231	192			
13	176	101	159	92	105	107	160	186	151			
20	205	143	123	75	75	269	138	202	174			
27	161	120	111	69	58	398	370	222	131			
June 3	169	351	165	73	63	134	157	141	113			
10	149	187	116	75	57	313	135	331	105			
17	185	119	95	230	124	341	182	258	99			
24	158	124	101	98	63	130	110	141	94			
July 1	129	121	73	61	99	105	158	111	76			
8	116	94	200	56	291	123	197	163	93			
15	113	98	103	87	313	90	659	129	219			
22	90	326	83	126	1000	105	160	129	173			
29	236	433	115	53	165	273	132	92	136			
Aug. 5	171	249	103	44	121	103	100	156	118			
12	120	331	76	43	118	99	110	127	98			
19	119	120	369	1780	76	254	197	81	114			
26	226	96	175	136	182	124	86	78	107			
Sept. 2	305	88	94	364	118	83	73	80	85			
9	281	109	74	112	85	410	74	65	94			
16	165	90	63	83	65	118	68	87	337			
23	118	80	57	69	55	92	134	90	1830			
30	116	71	59	73	66	116	86	228	147			
Oct. 7	188	85	90	62	48	93	96	231	129			
14	114	71	61	67	45	83	73	98	119			
21	969	68	54	90	48	83	78	269	102			
28	402	80	56	63	71	111	78	159	119			
Nov. 4	211	77	57	183	89	108	77	112	106			
11	145	158	58	96	67	91	234	110	103			
18	166	92	62	123	61	87	107	100	117			
25	122	154	76	90	70	90	97	113	187			
Dec. 2	170	102	60	92	64	114	87	235	140			
9	140	94	68	76	164	234	89	168	419			
16	126	98	67	89	94	141	89	187	178			
23	131	96	84	141	102	104	88	136	147			
31	207	202	107	227	185	641	210	130	717			
Maximum	1350	433	717	1780	1000	641	659	859	1830			
Minimum	90	68	54	43	45	83	73	65	76			

First Broad River near Lawndale, N. C.

Location.- Water-stage recorder, lat. $35^{\circ}22'50''$, long. $81^{\circ}32'40''$, 500 feet downstream from dam at Double Shoals, an eighth of a mile upstream from Barnes Creek, and $2\frac{1}{2}$ miles southeast of Lawndale, Cleveland County.

Drainage area.- 198 square miles.

Records available.- February 1940 to December 1945.

Extremes.- Maximum discharge, 21,000 million gallons per day Aug. 14, 1940 (gage height, 37.8 feet), from rating curve extended above 5,360 million gallons per day on basis of records for stations on nearby streams; minimum 10 million gallons per day June 23, 30, 1940, July 25, 1943.

Flood of July 1916 reached a stage of 37.8 feet, from reference marks established by local resident.

Remarks.- Considerable diurnal fluctuation and slight regulation at low flow caused by power plants and mills above station.

Mean Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Mean
1940													---
1941	95.0	78.8	125	107	64.3	64.4	51.8	694	74.9	61.0	89.1	97.5	---
1942	101	291	251	117	120	156	154	205	160	85.3	85.3	276	166
1943	417	236	226	196	159	123	255	124	93.0	74.3	101	95.0	175
1944	156	219	392	298	165	140	116	85.9	137	162	124	135	178
1945	146	215	165	144	109	70.4	132	98.8	487	108	114	374	180
Max.	417	291	392	298	165	156	419	694	487	162	124	374	180
Min.	95.0	78.8	121	107	64.3	64.4	51.8	85.9	71.7	61.0	70.4	95.0	166
Mean	183	208	213	166	115	108	188	223	171	98.1	97.3	181	175

First Broad River near Lawndale, N. C.

Maximum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Maximum of year
1940			220	178	95	249	147	12900	227	241	335	199	12900
1941	151	116	264	362	139	717	2330	665	129	---	168	301	---
1942	157	2290	1580	200	310	691	982	1600	846	266	125	2360	2360
1943	3710	1060	853	891	339	211	1200	643	374	114	368	327	3710
1944	665	911	1720	956	402	324	289	200	1830	982	433	198	1830
1945	242	544	415	256	154	118	490	467	5030	172	374	1320	5030
Max.	3710	2290	1720	956	402	717	2330	12900	5030	982	433	2360	12900
Min.	151	116	220	178	95	118	147	200	129	114	125	198	1830
Mean	985	984	842	474	240	385	906	2750	1406	355	300	784	3232

Minimum Discharge in Million Gallons per day

Year	January	February	March	April	May	June	July	August	September	October	November	December	Minimum of year
1940			59	49	40	19	19	27	26	28	51	45	---
1941	64	47	53	78	49	42	81	65	48	---	48	59	---
1942	65	77	88	76	57	64	53	55	74	64	65	80	53
1943	87	82	99	93	72	78	54	67	57	54	61	52	52
1944	71	67	99	146	111	85	64	56	43	78	69	81	43
1945	81	85	99	81	72	49	52	59	54	72	61	83	49
Max.	87	85	99	146	111	85	81	67	74	78	69	83	53
Min.	64	47	53	49	40	19	19	27	26	28	48	45	43
Mean	73.6	71.6	82.8	87.2	66.8	56.2	53.8	54.8	50.3	59.2	59.2	66.7	49.2

First Broad River near Lawndale, N. C.

Mean Weekly Discharge in Million Gallons per day

Week Ending	1940	1941	1942	1943	1944	1945				
Jan. 7		118	127	258	243	181				
14		89	89	119	119	156				
21		85	94	483	184	135				
28		90	89	756	105	124				
Feb. 4		81	119	395	90	112				
11		73	237	455	114	107				
18		92	549	158	368	284				
25		76	246	129	223	317				
Mar. 4	115	73	141	115	218	191				
11	107	162	582	130	210	154				
18	154	111	163	171	189	129				
25	114	95	145	474	595	149				
Apr. 1	138	145	165	181	698	213				
8	116	203	120	143	227	136				
15	103	118	137	146	422	114				
22	98	94	110	340	300	138				
29	101	122	100	170	248	196				
May 6	78	89	104	135	213	134				
13	67	85	92	172	169	111				
20	57	70	129	136	162	114				
27	56	60	163	195	146	94				
June 3	61	54	90	139	124	83				
10	57	56	200	130	209	80				
17	96	221	263	130	139	72				
24	61	48	97	107	113	69				
July 1	45	77	96	127	103	56				
8	43	258	123	221	144	65				
15	54	279	76	490	132	140				
22	74	1120	76	136	105	134				
29	42	151	356	205	81	205				
Aug. 5	40	176	90	125	125	120				
12	60	100	120	133	101	83				
19	2490	72	488	193	83	67				
26	139	192	186	87	60	147				
Sept. 2	417	87	79	92	67	74				
9	90	84	346	87	58	77				
16	96	65	130	74	78	248				
23	45	56	89	138	97	1610				
30	38	78	97	79	337	137				
Oct. 7	45	---	79	74	149	107				
14	50	---	76	71	98	111				
21	63	---	76	79	286	94				
28	52	---	110	74	143	123				
Nov. 4	142	81	97	76	109	92				
11	68	79	83	163	93	83				
18	124	61	82	89	91	89				
25	63	66	83	80	94	169				
Dec. 2	63	61	112	76	247	126				
9	60	132	222	79	147	144				
16	72	79	135	74	154	138				
23	109	86	98	75	120	115				
31	152	143	624	150	111	814				
Maximum			624	756	698	1610				
Minimum			76	71	58	56				

CATAWBA RIVER MISCELLANEOUS MEASUREMENTS

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
June 28, 1900	Catawba River	Old Fort	Wateree River	34.1
Aug. 20, 1900	do	do	do	7.11
Sept. 20, 1900	do	do	do	7.75
July 31, 1925	do	Bridge on route 10, 4 miles West of Marion	do	33.8
May 18, 1907	do	Iron Wagon bridge 3 miles from Marion (possibly at or near site of present gaging station)	do	183
Aug. 13, 1940	do	Near Marion, at site of present gaging station	do	46,100
June 29, 1918	do	Highway bridge at Bridgewater	do	215
Mar. 28, 1900	do	Near Morganton, at site of gaging station established June 20, 1900	do	2,600
June 13, 1900	do	do	do	900
June 18, 1900	do	do	do	2,600
June 30, 1896	do	At Catawba, at site of gaging station July 4, 1896 to 1902	do	674
Nov. 13, 1903	do	Mt. Holly	do	770
Dec. 3, 1903	do	At Southern Rwy bridge 2 miles east of Belmont	do	200
Mar. 4, 1904	do	do	do	1,410
June 28, 1900	Mill Creek	Old Fort, at or near site of gaging station 1907, 1930-31	Catawba River	54.9
Aug. 20, 1900	do	do	do	17.4
Sept. 20, 1900	do	do	do	8.40
Aug. 13, 1940	do	At Old Fort, at site of former gaging station	do	5,090
June 28, 1900	Jarrett Creek	Near Old Fort	Mill Creek	11.0
June 28, 1900	Curtis Creek	200 feet above ford, $\frac{1}{2}$ mile from mouth, near Old Fort	Catawba River	53.0
Aug. 20, 1900	do	do	do	10.7
Sept. 15, 1930	do	At Old Fort, one third mile above mouth	do	4.15
Oct. 20, 1930	do	500 ft. above Southern Rwy. bridge at Old Fort	do	2.89
Nov. 14, 1930	do	do	do	5.11
Feb. 4, 1931	do	do	do	7.49
May 15, 1931	do	do	do	16.2
June 15, 1931	do	do	do	9.37
June 23, 1931	do	do	do	7.49
July 27, 1931	do	do	do	9.88
June 28, 1900	Crib Creek (Mackey Creek)	Near ford on main road, $\frac{1}{4}$ mi. from mouth, near Old Fort	do	18.1
Aug. 28, 1900	do	do	do	6.46

Catawba River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge W. G. P. D.
June 28, 1900	Clear Creek	200 feet above ford of main road, $\frac{1}{2}$ mi. from mouth near Marion	Catawba River	16.3
Aug. 28, 1900	do	do	do	7.75
Aug. 13, 1940	Buck Creek	At Lake Tahoma near Marion, $2\frac{1}{2}$ miles from mouth	do	4,010
June 14, 1900	do	At main road, $1/8$ mile above mouth near Marion	do	33.5
Aug. 20, 1900	do	do	do	26.7
Jan. 11, 1933	North Fork (N. Cove Creek)	About 3 miles north of Ashford, opposite small highway bridge	do	5.06
Feb. 3, 1933	do	do	do	4.86
Apr. 5, 1933	do	do	do	3.38
July 25, 1933	do	do	do	1.69
Oct. 6, 1933	do	do	do	.81
Aug. 13, 1940	North Fork	About 3 miles north of Ashford	do	9,500
Aug. 13, 1940	do	About 1 mile north of Sevier	do	35,700
July 3, 1900	do	First ford above mouth near Marion	do	155
Aug. 18, 1900	do	do	do	43.5
Sept. 21, 1900	do	do	do	39.9
June 15, 1900	Turkey Cove Creek	Just above second ford near Woodlawn	North Fork	13.9
June 26, 1900	do	do	do	107
June 14, 1900	Muddy Creek	Bridgewater	Catawba River	105
June 16, 1900	do	do	do	399
July 10, 1900	do	do	do	76.9
Aug. 17, 1900	do	do	do	63.7
Sept. 21, 1900	do	do	do	65.9
Apr. 19, 1905	do	do	do	62.0
June 14, 1900	Paddy Creek	Near Bridgewater	do	12.8
June 16, 1900	do	do	do	132
July 10, 1900	do	do	do	7.43
Aug. 17, 1900	do	do	do	4.52
June 21, 1900	Linville River	At Linville	do	13.6
June 24, 1900	do	do	do	58.3
Oct. 18, 1904	do	One-half mile above Falls	do	12.0
Aug. 8, 1907	do	Railroad bridge $\frac{1}{2}$ mile east of (Saginaw) Pineola	do	28.4
June 14, 1900	do	Near Bridgewater, at site of gaging station, July 3 to Sept. 30, 1900	do	67.2
June 27, 1918	do	1 mile above mouth near Bridgewater, at or near site of former gaging station	do	80.8

Catawba River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
June 14, 1900	Canoe Creek (Cane Creek)	Lowest ford of main Morganton road	Catawba River	12.0
June 18, 1900	do	do	do	18.3
Aug. 17, 1900	do	do	do	4.65
June 14, 1900	Silver Creek	Near Morganton	do	80.1
Aug. 10, 1900	do	do	do	31.3
Sept. 24, 1900	do	do	do	36.2
June 14, 1901	do	do	do	64.3
Aug. 13, 1940	Bailey Fork	Near Morganton, $\frac{1}{2}$ mile from mouth	Silver Creek	6,270
Aug. 13, 1940	Warrior Fork	Near Morganton, $1\frac{1}{4}$ miles below junction of Irish and Upper Creeks	Catawba River	24,900
June 20, 1900	Upper Creek	Upper Creek falls	Warrior Fork	17.4
June 20, 1900	do	At Henderson's Mill near Worry, about $3/4$ mile above Irish Creek	do	13.2
Aug. 13, 1940	do	Near Worry, $1\frac{1}{2}$ miles east of Tablerock, $\frac{1}{2}$ mile above Steel Creek	do	16,300
June 13, 1900	do	Near Morganton, $\frac{1}{4}$ mile above mouth	do	118
July 6, 1900	do	do	do	32.3
Aug. 8, 1900	do	do	do	54.9
Sept. 24, 1900	do	do	do	38.8
Nov. 1, 1945	Irish Creek	Near Tablerock, at fish hatchery	do	1.96
do	do	do	do	1.92
Aug. 13, 1940	Steel Creek	Near Tablerock, $\frac{1}{2}$ mile from mouth	Upper Creek	15,800
June 20, 1900	do	Near Tablerock, 100 yards above mouth	Catawba River	64.6
Oct. 16, 1913	Hunting Creek	Rear of Tannery. Morganton	do	2.59
Aug. 13, 1940	do	At Southern R. R. bridge near Morganton	do	9,170
Sept. 25, 1900	Johns River	At Collettsville, at or near site of gaging station, 1907	do	25.8
Nov. 6, 1900	do	do	do	87.2
Aug. 1, 1925	do	Highway bridge at Collettsville, site of former gaging station	do	11.1
Aug. 13, 1940	do	At Collettsville, near site of former gaging station	do	19,900
Oct. 22, 1921	do	At Southern Hwy. bridge $\frac{1}{4}$ mile below Collettsville	do	29.0
June 13, 1900	do	Near Morganton, at site of gaging station July 3, 1900 to Dec. 31, 1901	do	300
June 19, 1900	do	Near Morganton, at or near site of former gaging station	do	776
Feb. 13, 1903	do	do	do	770

Catawba River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
May 27, 1904	Johns River	Near Morganton, at site of former gaging station	Catawba River	191
July 21, 1904	do	do	do	132
Aug. 19, 1904	do	do	do	154
Sept. 29, 1904	do	do	do	98.8
Dec. 16, 1904	do	do	do	94.3
Apr. 19, 1905	do	do	do	183
June 27, 1905	do	do	do	154
Aug. 25, 1905	do	do	do	302
Nov. 9, 1905	do	do	do	91.7
Mar. 2, 1906	do	Near Morganton, at or near site of former gaging station	do	234
June 18, 1906	do	do	do	988
Sept. 25, 1900	Mulberry Creek	At Collettsville, at mouth	Johns River	111.0
Nov. 6, 1900	do	do	do	25.2
Aug. 13, 1940	Little Mulberry Creek	Near Collettsville, about 1 mile from mouth	Mulberry Creek	8,910
Oct. 22, 1921	Wilson Creek	In gorge above Adako	Johns River	35.1
Aug. 1, 1925	do	Near Adako, at site of former gaging station	do	16.0
Aug. 13, 1940	do	do	do	64,000
Dec. 7, 1940	do	do	do	26.4
Nov. 6, 1900	do	do	do	134
June 13, 1900	Lower Creek	At mouth, 3-3/4 miles southwest of Collettsville Two miles above mouth, about 5 miles northeast of Morganton	Catawba River	135
July 6, 1900	do	do	do	85.3
Aug. 8, 1900	do	do	do	14.6
Sept. 24, 1900	do	do	do	36.2
Aug. 13, 1940	do	Bridge on US Hwy. 321, at Lenoir, $\frac{1}{4}$ mile below Cane Creek	Catawba River	13,000
Aug. 13, 1940	Gurnpowder Creek	At Duke Power Co. plant No. 2, 1 mile southeast of Granite Falls	Catawba River	8,330
Aug. 13, 1940	Lower Little River	At Liledown Mills, 1 $\frac{1}{4}$ miles downstream from Spring Creek, and 3 miles southwest of Taylorsville	Catawba River	14,900
Aug. 3, 1937	Lyle Creek	Just above mouth of Catawba	Catawba River	42.2
Nov. 3, 1937	do	do	do	29.3
Jan. 8, 1938	do	do	do	40.8
Mar. 15, 1938	do	do	do	35.4
Feb. 5, 1939	do	do	do	87.2
Dec. 14, 1939	do	do	do	23.1

Catawba River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
May 1, 1940	Lyle Creek	Just above mouth of Catawba	Catawba River	26.0
June 6, 1940	do	do	do	21.4
Dec. 31, 1941	do	do	do	24.6
Feb. 9, 1942	do	do	do	44.3
Apr. 21, 1942	do	do	do	36.0
Aug. 11, 1942	do	do	do	17.4
Apr. 20, 1943	do	do	do	125
July 8, 1943	do	do	do	175
Aug. 17, 1943	do	do	do	22.4
Mar. 20, 1944	do	do	do	129
July 14, 1944	do	do	do	46.3
Nov. 17, 1944	do	do	do	31.8
Feb. 26, 1945	do	do	do	78.8
Apr. 19, 1945	do	do	do	52.2
July 22, 1945	do	do	do	27.0
Sept. 8, 1935	do	do	do	30.0
Nov. 11, 1923	Henry Fork (head of S. Fork Catawba River)	Morganton Water-supply		
Oct. 31, 1925	do	Above pond (60 ft. below Hwy. bridge) at Henry River	do	.019
June 17, 1925	Henry Fork	Near Henry River, at site of gaging station estab- lished July 26, 1925	do	18.9
Aug. 13, 1940	do	At Henry River Mills, near Henry River and sites of former and present gaging stations	do	45.2
Aug. 13, 1940	S. Fork Catawba River		do	20, 200
Mar. 4, 1904	do	At High Shoals	do	14,000
Mar. 5, 1904	do	At Southern Railway bridge, 2 miles west of Belmont	do	406
Nov. 22, 1938	Jacob Fork	At wagon bridge, 2 miles southwest of Belmont	do	442
Nov. 22, 1938	Tributary to Clark Creek	At mouth near Newton	do	62.5
August 1940	Indian Creek	At mouth on Rt. bank of Clark Creek just above State Hwy. 73, near Newton	Henry Fork	
Sept. 29, 1930	Long Creek	At Indian Creek Mills, near Laboratory, 1½ miles from mouth	Clark Creek	.33
Oct. 4, 1925	do		S. Fork	
Sept. 10, 1925	do		Catawba River	3,880
Oct. 4, 1925	do			4.41
				4.02
				3.16
				4.02

Catawba River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
May 8, 1925	Long Creek	Bridge on Rozelle Bridge Road, $3\frac{1}{2}$ miles N. E. of Mt. Holly	Catawba River	4.48
Sept. 29, 1930	Catawba Creek	30 ft. upstream from outfall of Gastonia disposal plant. At site of former gaging station.	do	.30
Sept. 29, 1930	McAlphine Creek	200 feet below State Hwy. 20, 3 miles west of Matthews	Sugar Creek	1.45
		BROAD RIVER MISCELLANEOUS MEASUREMENTS		
Aug. 21, 1900	Broad River	Bridge at Batcave	Santee River	~ 32.4
Aug. 21, 1900	do	do	do	31.0
Oct. 6, 1900	do	do	do	40.3
Aug. 10, 1901	do	Near Chimney Rock	do	160
Aug. 22, 1900	do	Near mouth of Buffalo Creek near Chimney Rock	do	36.8
Oct. 6, 1900	do	do	do	93.7
June 15, 1925	do	About $\frac{1}{4}$ mile below Lake Lure, $1\frac{1}{2}$ miles below Buffalo Creek, and 3 miles east of Chimney Rock	do	46.4
Aug. 5, 1925	do	do	do	30.1
Aug. 25, 1925	do	do	do	19.6
Aug. 25, 1900	do	McClure's Bridge, near Rutherfordton	do	142
Oct. 18, 1900	do	do	do	280
Aug. 9, 1901	do	Ford 1 mile above Second Broad River near Cliffside	do	442
Aug. 28, 1900	do	At mouth 1 mile northwest of Batcave	Broad River	419
Aug. 21, 1900	Hickory Nut Creek	At mouth at Batcave	do	9.82
Aug. 21, 1900	Reedy Patch Creek	do	do	8.40
Aug. 22, 1900	Buffalo Creek	15 yards below main ford near mouth, 1-3/4 miles east of Chimney Rock	do	11.0
Aug. 22, 1900	Cove Creek	Bridge at Rutherfordton road	do	44.8
Oct. 6, 1900	do	do	do	55.6
May 17, 1907	do	Near mouth, Nanney	do	69.8
Aug. 25, 1900	Mountain Creek	Near mouth, near Rutherfordton	do	35.7
Oct. 8, 1900	do	do	do	45.3
Aug. 25, 1900	Maple Creek	Near mouth, near Rutherfordton	do	5.43
Sept. 3, 1900	Green River	Near Saluda on Howard Gap road	do	47.9
Nov. 13, 1905	do	At wagon bridge 1 mile upstream from Hungry River, about $3\frac{1}{2}$ miles east of Flatrock. (Site of gaging station "Green River near Saluda" 1907-09)	do	do
				47.2

Broad River Miscellaneous Measurements (Cont'd)

Date	Stream	Location	Tributary to	Discharge M. G. P. D.
Nov. 13, 1905	Green River	At wagon bridge 1 mile upstream from Hungry River, about $3\frac{1}{2}$ miles east of Flat rock. (Site of gaging station "Green River near Saluda" 1907-09)	Broad River	46.5 424 102 64.0
June 13, 1906	do	do	do	62.7
Sept. 14, 1906	do	do	do	193
Apr. 4, 1907	do	do	do	165
do	do	do	do	538
Aug. 25, 1900	do	do	do	160
Oct. 8, 1900	do	do	do	12.4
Aug. 9, 1901	do	do	do	41.3
Apr. 18, 1905	do	do	do	52
Sept. 3, 1900	Cove Creek	Near mouth, near Saluda	Green River	2.31
Aug. 31, 1900	Whiteoak Creek	$\frac{1}{2}$ mile from mouth, $4\frac{1}{2}$ miles north of Melvin Hill	do	11.2
Nov. 25, 1931	Brackett Creek	Below Municipal dam at Forest City	Floyd's Creek	2.09
Dec. 11, 1931	do	do	do	2.05
Jan. 1, 1932	do	do	do	do
Jan. 22, 1932	do	do	do	do
Mar. 30, 1932	do	do	do	do
Aug. 24, 1900	Second Broad River	Bridge on Rutherfordton-Morganton road	Broad River	35.5
Oct. 4, 1900	do	do	do	41.3
Aug. 13, 1901	do	do	do	176
Aug. 23, 1900	do	do	do	98.8
Oct. 5, 1900	do	do	do	121
June 16, 1925	do	do	do	do
Aug. 24, 1900	Cane Creek	1 mile above mouth, about 7 miles north of Forest City	Second Broad River	6.07
Aug. 23, 1900	Cathey Creek	At mouth about $3\frac{1}{2}$ miles north of Forest City	do	11.0
Aug. 23, 1900	Hollands (Hol- lins) Creek	At mouth about $3\frac{1}{2}$ miles north of Forest City	Cathey Creek	27.1
Aug. 24, 1900	Robersons Creek	At mouth near Bostic	Second Broad River	9.24
Aug. 23, 1900	Puzzle Creek	Near mouth, 1-3/4 miles east of Forest City	Broad River	15.5
Aug. 13, 1940	First Broad Rv.	Near Gambles Store, $\frac{1}{4}$ mile below North Fork	do	6.46
Aug. 30, 1900	do	Near mouth, near Boiling Springs	do	8,910
Oct. 10, 1900	do	do	do	184
Aug. 14, 1940	Buffalo Creek	At Stubbs, $\frac{1}{4}$ mile below Long Creek	do	172
Jan. 22, 1926	N. Pacolet River	At former gaging station near Tryon	do	5,670
Summer 1921	Vaughn Creek	At Tryon	N. Pacolet River	100 4.52

CLIMATOLOGICAL

Precipitation records compiled by the United States Weather Bureau at 26 stations in the Catawba and Broad River Basins are available for the periods shown on the graph on page 68. Only 12 of these stations were in operation during 1945 and of these 12 the records of 5 stations are published in this report. These 5 stations were selected for their length of record as well as their location in the basins. A very good conception of the rainfall distribution can be obtained by referring to map on page 69 showing the isohyetal lines for the 25 year period from 1921 to 1945. Copies of the unpublished records may be obtained from either the U. S. Weather Bureau, Raleigh, N. C., or the Division of Water Resources and Engineering of the Department of Conservation and Development, Raleigh, N. C.

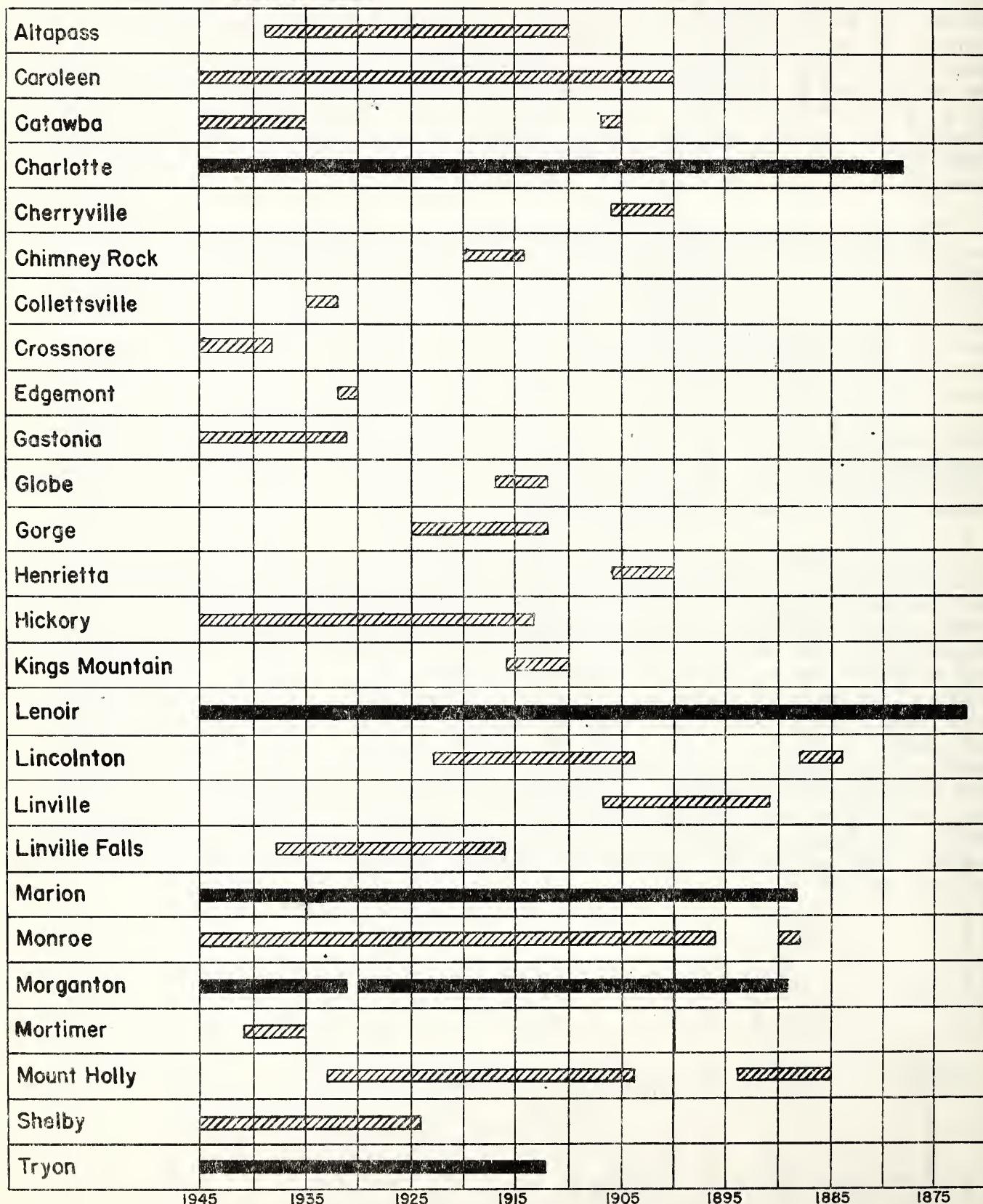
The mean annual rainfall of these basins as computed from 8 stations for the period 1921-45 is 49.62 inches with the lowest occurring at Charlotte of 44.95 inches and highest at Tryon of 58.97 inches. The minimum recorded annual rainfall occurred at Caroleen in 1925, and amounted to 24.85 inches; while the maximum recorded annual rainfall, at Marion in 1901, amounted to 87.27 inches. Most of the precipitation in these basins occurs as rainfall; the small amounts of snow which falls are unimportant, since it is not sufficient to remain and cause damaging spring freshets. The effects of topography on rainfall are brought out by the Blue Ridge escarpment. Storms impinging against this mountain front cause heavy rainfall in the headwaters resulting in heavy freshets. The exposure is northwest-southeast, in direct line with a number of the West Indian tropical storms. A mean annual isohyetal map for the 25 year period 1921-45 for the area covered by this report is shown on page 69.

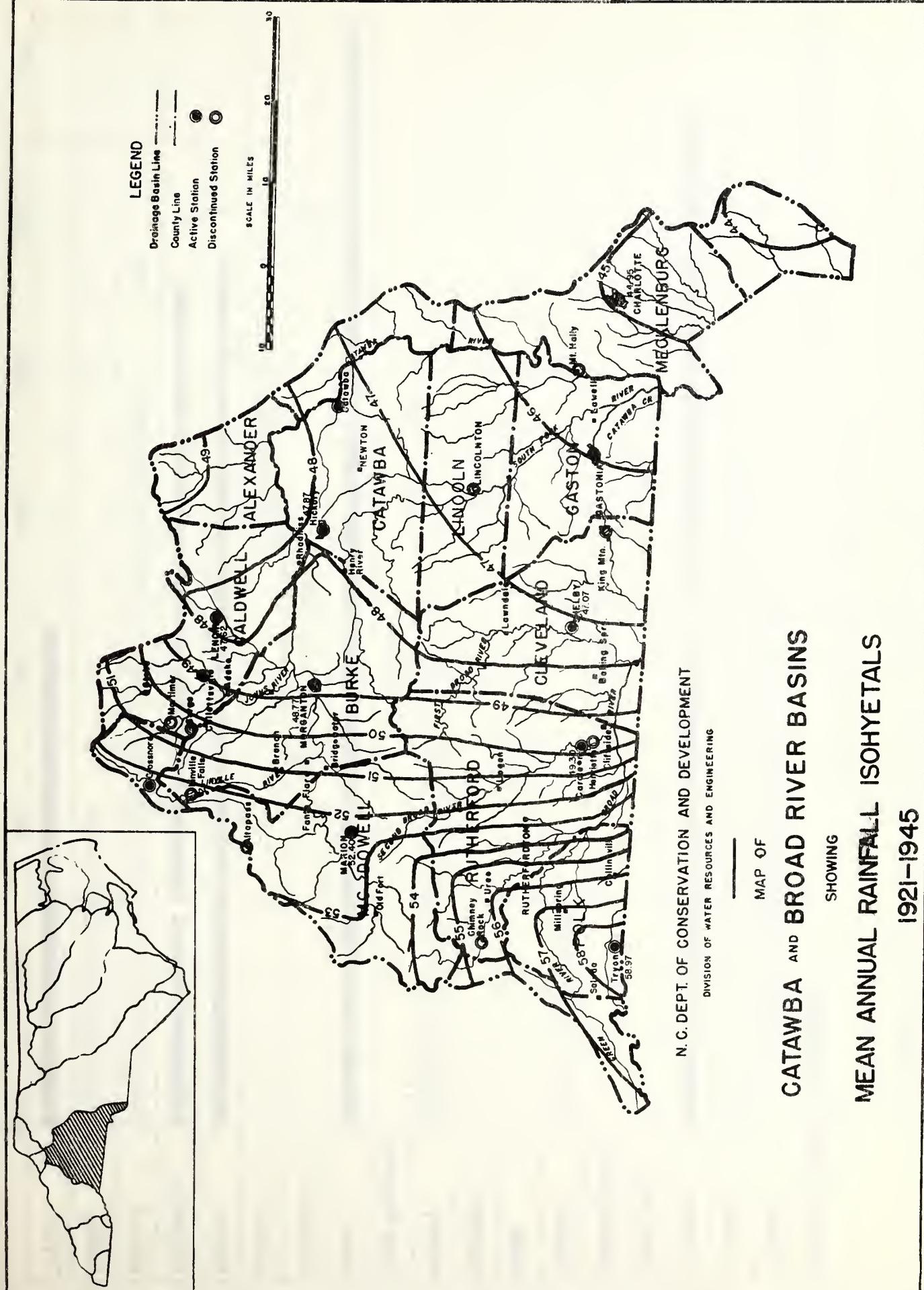
The mean annual temperature of these basins for the 25 years 1921-45 varies from 58.2 degrees at Lenoir to 61.4 degrees at Charlotte; with an average for both basins as computed from 6 stations of 59.8 degrees. The variations are greater in the minimum than in the maximum temperature, owing partly to local topography as well as to differences in elevation. Comparatively little severe cold weather is experienced until the middle of December. January is the coldest month but February is almost as cold. All stations have a record of temperature below zero, though some in the Piedmont only a degree or two. Severe cold seldom lasts more than three or four days. The lowest temperature on record is 19 degrees below zero at Altapass on December 30, 1917. Nearly all of the Piedmont stations have a record of 100 degrees in the months of June, July and August, but there are few such records, and the number with temperature above 95 degrees is comparatively small. The highest temperature of record is 106 degrees at Caroleen, Hickory and Lenoir. A map showing the mean annual isotherms for the 25 year period 1921-45 will be found on page 71.

RAINFALL STATIONS IN CATAWBA AND BROAD RIVER BASINS SHOWING RECORDS AVAILABLE

Records Published

Records Not Published

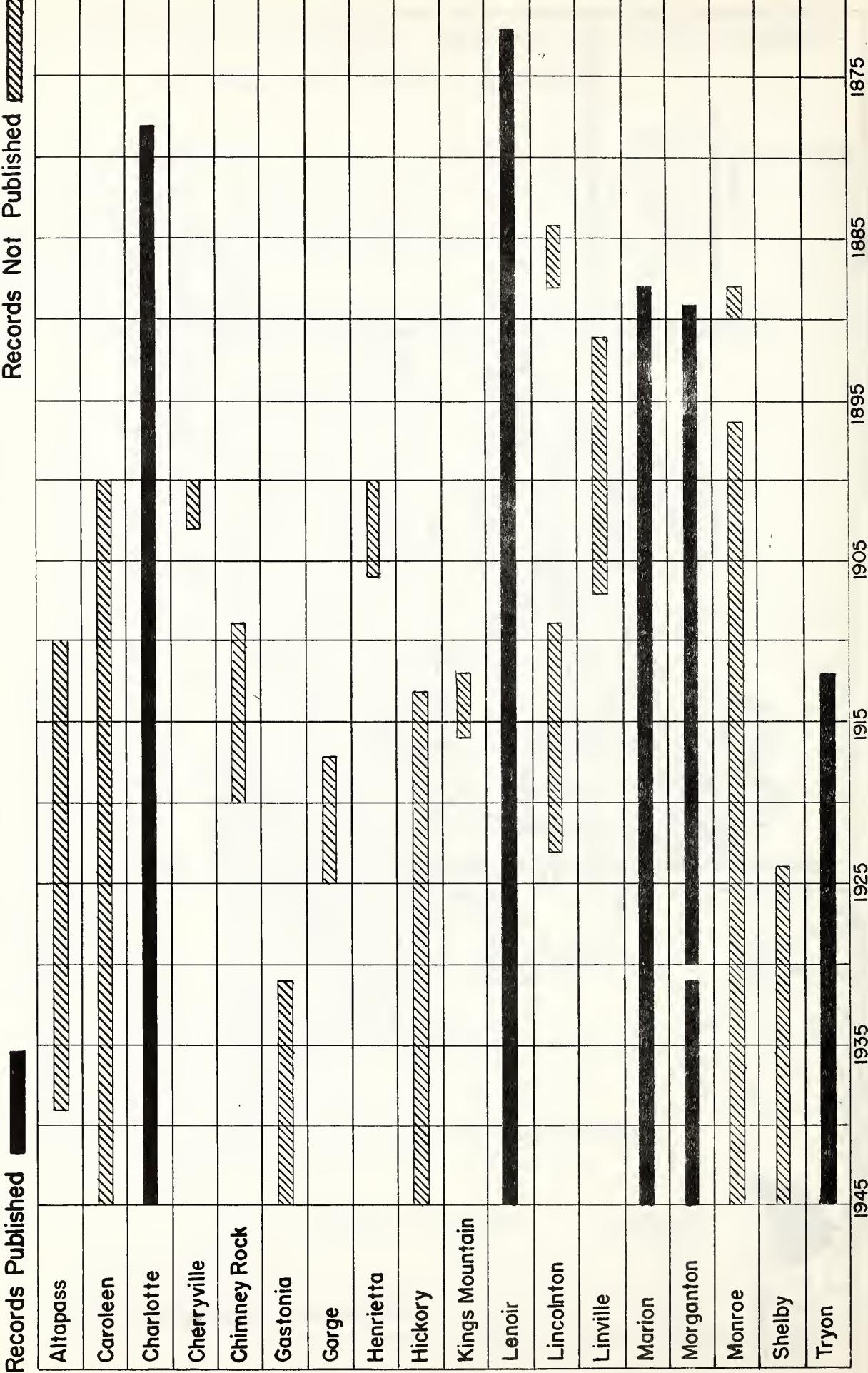


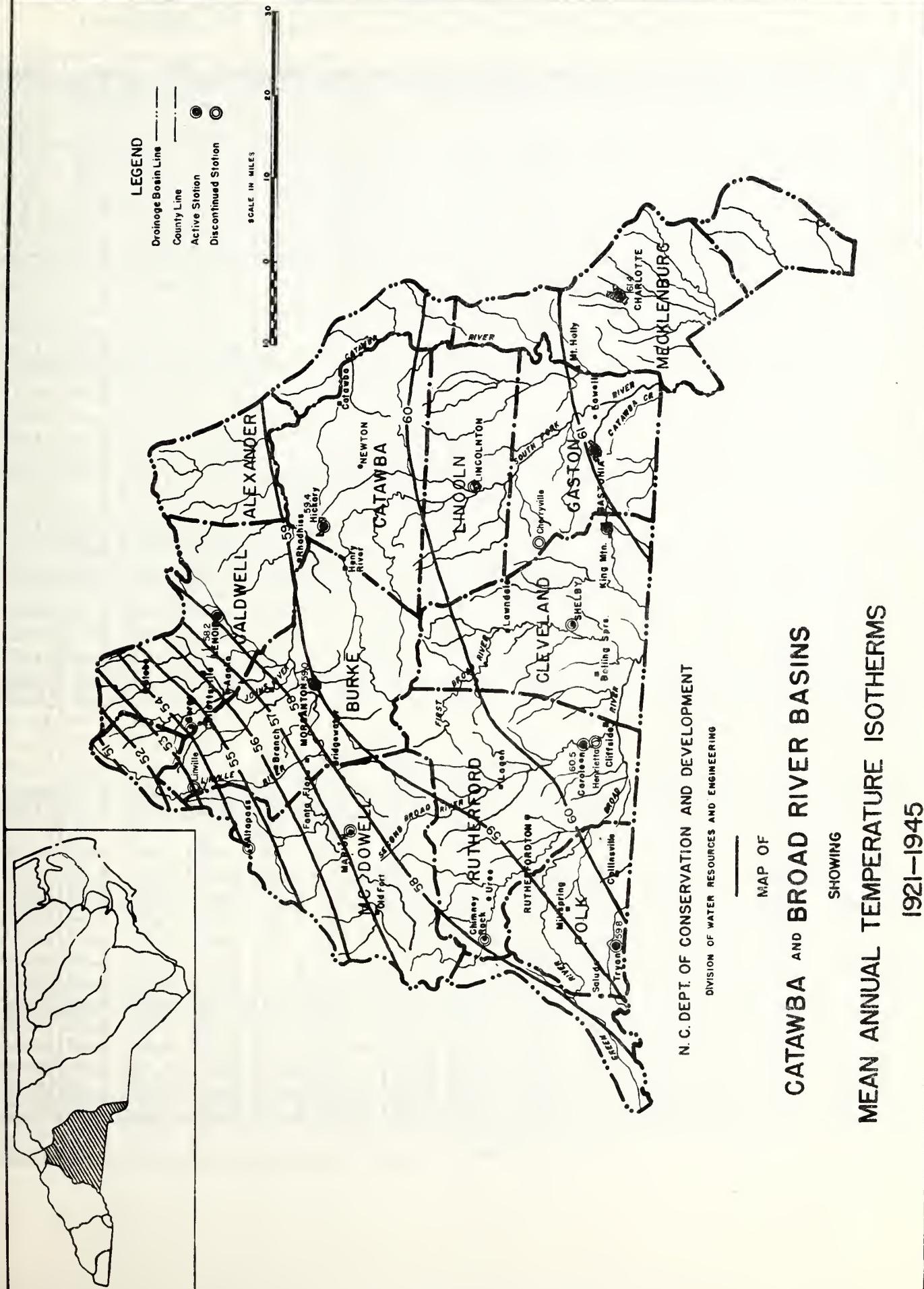


N. C. DEPT. OF CONSERVATION AND DEVELOPMENT
DIVISION OF WATER RESOURCES AND ENGINEERING

MAP OF
CATAWBA AND BROAD RIVER BASINS
SHOWING
MEAN ANNUAL RAINFALL ISOHYETALS
1921-1945

**TEMPERATURE STATIONS IN CATAWBA AND BROAD RIVER BASINS
SHOWING RECORDS AVAILABLE**





Precipitation in Charlotte, Mecklenburg County, North
Carolina: Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1878	3.40	2.40	1.20	4.00	3.90	3.30	3.50	5.00	4.20	3.12	5.11	6.55	45.68
1879	3.62	3.62	2.03	2.41	3.97	2.66	8.64	7.89	0.53	1.92	1.79	5.26	44.34
1880	2.43	3.10	9.57	5.64	1.15	4.36	5.92	10.57	1.84	2.94	5.96	6.42	59.90
1881	6.81	3.95	3.67	3.61	2.26	1.35	1.83	1.15	2.66	2.69	4.58	4.77	39.33
1882	7.24	5.35	2.88	5.93	3.22	1.98	5.39	4.34	4.58	6.13	1.58	4.91	53.33
1883	8.87	5.47	6.54	6.05	1.39	5.45	5.23	2.00	4.00	4.31	4.65	3.13	57.09
1884	7.60	6.43	9.19	5.40	4.84	9.47	7.90	2.08	3.57	1.51	4.73	5.72	68.44
1885	8.90	4.54	2.91	2.83	6.47	3.48	6.31	4.01	3.45	6.64	4.10	4.71	58.35
1886	4.94	2.76	6.39	3.88	11.04	11.04	8.05	6.34	0.68	0.34	2.88	6.26	64.60
1887	2.39	4.81	2.93	1.84	3.64	4.44	7.46	9.02	1.24	8.04	0.51	4.94	51.26
1888	4.38	4.26	6.22	2.36	5.64	1.66	1.68	6.93	8.25	5.87	1.69	3.67	52.61
1889	6.15	4.59	1.62	2.60	2.75	10.54	8.17	4.53	2.88	1.53	4.44	0.48	50.28
1890	0.94	3.65	3.08	2.34	7.07	0.52	6.07	5.35	5.54	4.89	0.23	3.81	43.49
1891	3.92	6.95	11.13	2.79	7.58	3.77	3.79	6.82	0.76	0.68	3.05	1.26	52.50
1892	7.66	3.36	4.05	3.50	2.28	5.51	5.89	2.31	2.27	0.23	2.99	2.68	42.73
1893	2.43	7.46	1.74	1.64	4.23	5.48	4.22	9.81	6.99	8.27	2.44	1.62	56.33
1894	3.23	4.54	1.04	2.43	2.27	3.68	4.99	3.03	5.60	6.12	1.71	4.30	42.94
1895	5.84	1.87	5.52	5.00	4.05	2.70	2.94	4.41	0.33	0.79	2.39	3.32	39.16
1896	2.26	5.40	1.55	1.90	1.68	3.35	6.38	1.05	4.69	0.98	3.67	1.87	34.78
1897	2.53	5.44	6.21	3.94	3.72	3.63	5.08	3.92	0.90	1.39	3.11	2.52	42.39
1898	2.08	0.81	5.83	2.71	2.08	3.79	4.82	8.74	4.04	3.63	2.42	2.12	43.07
1899	4.31	7.91	5.49	2.51	2.28	1.68	5.96	4.98	2.02	4.01	1.91	2.38	45.44
1900	2.15	5.25	5.28	5.32	2.11	7.31	3.55	3.05	0.73	3.41	3.85	4.33	46.34
1901	2.38	1.96	5.48	7.25	8.00	6.47	6.38	10.66	6.43	1.04	0.98	5.79	62.82
1902	2.42	6.07	3.54	1.68	3.39	4.07	4.58	3.74	3.48	4.49	4.44	3.42	45.32
1903	3.10	6.02	5.77	3.28	0.53	5.35	1.89	4.55	3.29	2.53	1.43	1.75	39.49
1904	1.38	3.42	2.60	0.89	2.15	6.42	6.20	10.31	1.78	0.91	3.01	2.86	41.93
1905	2.11	5.38	0.95	2.72	6.08	0.59	5.77	8.67	2.34	0.70	0.57	6.56	42.44
1906	6.34	1.65	5.17	0.93	3.66	4.83	5.57	8.56	2.40	4.17	1.07	3.31	47.66
1907	0.51	3.24	2.09	2.57	4.07	4.19	5.30	1.84	3.76	0.81	4.61	6.99	39.98
1908	6.18	3.75	4.27	1.29	2.20	2.65	5.62	14.61	1.50	6.58	1.69	4.06	54.40
1909	1.64	3.64	2.86	3.99	5.65	7.04	2.70	5.16	2.06	1.37	0.41	2.51	39.06
1910	3.36	3.59	0.86	2.34	4.26	8.14	3.12	4.82	2.89	4.01	0.36	2.53	40.28
1911	1.93	1.93	2.77	2.66	1.23	2.02	2.86	6.20	4.76	3.51	3.36	4.64	37.87
1912	2.81	5.00	7.86	3.92	3.14	5.39	3.56	1.87	3.50	1.14	1.90	1.34	41.43
1913	3.70	2.52	5.80	2.72	3.77	4.21	4.42	4.48	2.45	2.29	3.22	4.57	44.15
1914	2.78	4.03	1.56	2.99	0.49	2.12	4.83	2.25	2.02	3.11	2.45	6.53	35.16
1915	5.67	2.89	3.44	0.63	5.47	5.45	3.08	4.59	2.37	2.97	1.96	3.53	42.05
1916	1.66	5.87	1.38	2.15	4.41	5.55	16.55	2.70	0.88	2.64	0.36	2.32	46.47
1917	3.08	3.78	6.42	2.54	2.45	4.70	5.85	4.84	3.29	1.95	0.75	1.69	41.34
1918	3.82	1.92	2.33	5.47	2.92	2.43	1.90	2.18	5.83	3.00	3.23	4.35	39.38
1919	5.45	4.85	2.70	3.90	6.38	2.43	7.40	3.94	0.84	4.46	1.02	2.20	45.57
1920	3.81	3.54	7.11	5.40	1.33	3.56	4.11	8.91	3.53	0.10	4.95	4.47	50.82
1921	5.22	4.61	1.84	1.99	4.50	1.33	5.55	2.78	2.55	1.76	4.02	2.66	38.81
1922	5.24	7.12	6.32	6.59	3.72	2.74	5.19	2.74	1.23	5.32	0.92	4.47	51.60
1923	3.67	4.25	5.84	4.23	4.01	2.21	5.89	2.93	2.32	1.13	3.09	3.33	42.90
1924	3.98	4.18	2.40	6.78	2.82	7.86	3.01	0.94	10.84	0.45	1.37	4.33	48.96
1925	6.91	1.91	2.39	2.34	1.64	1.61	0.62	3.34	0.19	2.98	3.37	2.41	29.71

Precipitation in Charlotte, Mecklenburg County, North Carolina:
Monthly and annual (in inches and hundredths) continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1926	5.47	4.06	4.80	1.28	2.40	3.29	3.96	5.52	0.05	0.64	2.87	3.86	38.20
1927	1.05	3.84	3.83	3.04	1.44	3.41	5.52	3.02	1.11	4.15	1.30	9.52	41.23
1928	1.77	3.57	3.53	5.87	4.05	4.49	1.76	13.14	11.13	1.13	0.52	0.88	51.84
1929	2.58	8.58	7.09	3.35	5.90	5.88	3.52	2.78	3.01	6.47	4.31	3.54	57.01
1930	3.90	0.92	2.45	0.86	3.08	4.92	2.84	3.41	2.90	1.19	5.17	3.43	35.07
1931	2.37	1.93	4.41	2.60	6.53	0.60	8.62	8.13	1.15	1.26	0.42	11.24	49.26
1932	4.09	2.52	5.39	2.05	3.32	7.01	3.73	4.44	1.96	7.52	2.43	5.31	49.77
1933	1.37	2.37	2.52	2.02	2.46	1.31	2.08	5.27	4.69	2.97	1.03	1.79	29.88
1934	1.18	3.23	2.67	3.21	3.22	7.36	3.07	4.23	4.89	4.07	3.08	3.29	43.50
1935	1.68	3.35	5.01	4.02	3.74	0.50	8.27	2.70	5.47	0.89	3.64	2.15	41.42
1936	10.39	5.25	7.12	9.01	0.01	3.20	9.18	4.30	5.46	6.10	1.52	5.53	67.07
1937	7.74	2.77	2.13	6.13	2.66	5.35	4.19	4.31	2.31	4.70	2.37	2.79	47.45
1938	1.94	0.66	2.84	3.18	4.35	5.14	4.82	2.58	3.44	1.60	3.12	3.65	37.32
1939	3.30	8.08	5.00	1.69	3.60	4.30	8.07	5.85	1.56	1.09	1.09	2.56	46.19
1940	4.00	3.60	2.96	2.03	3.92	4.53	4.50	5.67	0.55	1.73	5.50	2.83	41.82
1941	1.36	1.67	3.58	3.04	0.21	4.07	8.44	2.39	1.18	2.08	0.79	4.82	33.63
1942	1.86	4.91	6.30	0.88	6.58	6.82	5.58	3.48	4.79	2.13	2.22	4.42	49.97
1943	6.15	1.23	5.08	2.85	1.65	7.03	7.00	1.72	5.13	0.35	1.00	3.42	42.61
1944	3.78	7.14	8.34	5.25	1.86	2.66	11.68	2.27	6.30	3.81	3.23	2.77	59.09
1945	2.08	5.37	2.72	3.81	1.40	1.75	6.38	2.84	12.66	1.43	1.56	7.52	49.52
Summary of Period 1921-45													
Max.	10.39	8.58	8.34	9.01	6.58	7.86	11.68	13.14	12.66	7.52	5.50	11.24	67.07
Min.	1.05	0.66	1.84	0.86	0.01	0.50	0.62	0.94	0.05	0.35	0.42	0.88	29.71
Mean	3.72	3.88	4.26	3.52	3.16	3.97	5.34	4.03	3.87	2.68	2.40	4.10	44.95
Summary of Record													
Max.	10.39	8.58	11.13	9.01	11.04	11.04	16.55	14.61	12.66	8.27	5.96	11.24	68.44
Min.	0.51	0.66	0.86	0.63	0.01	0.50	0.62	0.94	0.05	0.10	0.23	0.48	29.71
Mean	3.84	4.06	4.23	3.37	3.53	4.24	5.28	4.90	3.35	2.91	2.52	3.90	46.12

Average Temperature - Charlotte, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1878	----	----	----	----	----	----	----	----	----	58.1	50.4	38.6	-----
1879	41.2	40.6	55.0	58.2	68.4	74.6	79.4	74.1	67.6	65.2	52.2	49.2	60.4
1880	50.4	49.2	51.6	61.4	71.0	75.9	78.7	76.2	69.8	59.6	45.1	37.8	60.5
1881	36.8	44.0	48.0	56.0	70.8	78.6	82.1	80.6	78.0	66.3	51.7	47.4	61.7
1882	44.2	49.8	54.0	61.5	65.5	77.6	78.1	76.6	70.7	63.9	48.4	38.2	60.7
1883	39.4	49.1	47.0	59.2	68.2	77.1	80.2	76.9	69.4	62.4	53.0	47.1	60.8
1884	38.6	51.6	53.9	57.2	69.6	70.8	77.4	75.4	73.1	66.5	50.9	44.1	60.8
1885	40.5	39.0	46.0	59.6	67.6	75.8	78.6	76.9	70.2	57.1	49.2	42.4	58.6
1886	35.6	40.1	48.8	59.6	68.2	72.5	76.4	75.5	72.4	60.2	50.6	39.4	58.3
1887	38.3	49.4	48.6	59.7	71.3	75.4	80.9	76.0	70.3	58.0	50.6	42.0	60.0
1888	42.8	46.6	49.7	63.2	68.8	77.2	79.0	79.0	69.0	57.3	52.0	42.8	60.6
1889	44.1	39.4	51.0	61.2	70.0	73.4	78.8	74.0	70.1	58.5	51.8	54.7	60.6
1890	50.8	52.8	49.6	60.6	69.8	80.2	77.3	75.3	70.8	59.7	55.4	42.9	62.1
1891	43.1	49.0	45.8	61.2	65.4	76.6	74.7	76.5	72.3	56.8	47.8	46.7	59.7
1892	38.2	45.6	47.6	56.7	68.2	76.3	76.8	77.9	69.6	60.2	48.8	42.1	59.0
1893	32.6	44.6	49.6	63.0	66.8	74.2	80.6	75.3	71.2	60.4	48.9	45.4	59.4

Average Temperature - Charlotte, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1894	44.7	44.9	56.6	59.6	69.4	76.2	76.8	75.9	72.9	61.0	48.5	43.8	60.9
1895	39.0	32.9	49.2	58.4	65.6	76.2	77.0	77.5	76.2	58.2	51.0	42.4	58.6
1896	40.1	44.3	48.2	64.8	75.2	74.1	78.0	79.4	72.6	59.0	55.6	41.6	61.1
1897	37.1	46.4	52.2	59.6	66.6	76.6	78.5	75.8	72.6	64.2	51.4	44.2	60.4
1898	45.0	41.5	55.1	55.7	71.9	77.4	78.4	77.2	73.2	60.5	47.6	43.0	60.5
1899	40.3	37.6	50.6	57.4	71.0	78.2	78.6	79.4	70.4	61.4	52.0	41.2	59.8
1900	41.4	39.5	48.1	59.6	69.0	74.8	79.4	81.9	76.4	65.2	52.0	42.6	60.8
1901	41.6	39.8	50.8	53.6	68.8	75.6	80.0	76.6	70.2	60.8	45.8	40.0	58.6
1902	38.4	36.6	51.7	57.8	72.4	76.5	80.2	76.8	70.0	62.4	57.7	42.4	60.2
1903	39.8	46.3	57.4	58.8	69.8	71.8	79.7	78.8	70.4	60.8	47.6	38.6	60.0
1904	37.3	39.6	52.0	55.5	68.8	75.1	77.6	75.7	72.2	60.0	50.0	40.8	58.7
1905	37.0	34.7	55.8	60.3	70.8	77.5	78.4	75.4	74.0	60.9	51.4	40.9	59.8
1906	44.4	43.4	46.8	63.2	67.8	76.0	76.5	78.7	74.5	57.8	52.4	44.8	60.5
1907	49.5	41.2	57.7	52.8	66.8	72.6	79.6	77.2	73.6	58.4	48.4	42.6	60.0
1908	40.5	38.4	57.6	63.4	68.8	74.4	77.9	75.6	69.6	59.5	53.2	45.9	60.4
1909	45.2	48.9	49.8	61.6	66.8	76.6	76.2	76.0	69.0	58.5	56.2	39.2	60.4
1910	41.6	41.2	57.8	61.4	66.4	72.2	77.6	76.6	73.1	63.7	48.0	38.4	59.8
1911	45.2	47.6	49.6	57.0	71.0	79.0	78.8	79.0	76.4	63.4	46.2	45.5	61.6
1912	34.7	38.8	49.2	61.3	69.5	73.2	77.7	76.4	75.0	62.4	49.8	45.4	59.5
1913	48.8	44.4	53.6	59.2	69.9	75.0	80.4	77.2	68.6	61.0	51.8	44.6	61.2
1914	43.8	39.6	46.2	60.6	70.6	79.8	78.4	77.7	69.2	62.2	50.5	38.4	59.8
1915	41.6	45.7	43.1	61.8	69.3	73.1	79.4	76.0	73.2	64.4	53.3	41.4	60.2
1916	47.6	43.6	49.8	59.0	72.5	74.1	76.0	77.6	70.0	61.0	53.0	43.3	60.6
1917	46.1	42.9	50.3	62.3	63.6	75.2	77.4	76.8	67.6	57.0	49.2	33.4	58.5
1918	32.4	48.6	55.8	57.4	72.3	75.2	76.0	78.8	67.0	64.0	50.7	47.2	60.4
1919	45.0	42.8	52.0	60.0	69.0	75.8	78.6	77.0	72.7	69.9	52.9	41.6	61.4
1920	39.8	39.8	49.8	57.8	65.6	75.6	77.8	74.9	72.7	62.7	49.4	43.0	59.1
1921	42.2	45.4	59.6	61.6	66.0	78.0	79.5	76.1	79.2	60.8	54.0	47.1	62.5
1922	40.2	48.4	53.2	61.0	69.4	77.6	78.8	74.9	73.5	62.8	51.6	46.6	61.5
1923	44.6	42.2	52.6	59.0	66.2	77.0	78.6	78.4	73.7	61.3	49.0	50.2	61.1
1924	40.0	40.6	48.6	58.8	66.0	77.0	77.0	80.0	67.6	60.9	52.2	44.1	59.4
1925	40.5	50.6	54.2	63.9	66.2	80.4	81.4	78.2	80.5	59.4	47.9	42.2	62.1
1926	41.0	46.2	45.0	58.6	69.9	75.4	80.1	80.7	76.3	63.6	47.8	44.4	60.8
1927	42.8	53.4	53.6	61.4	70.6	73.3	78.5	74.8	74.5	64.0	55.0	43.4	62.1
1928	41.8	43.7	50.9	57.2	67.2	75.4	80.6	79.8	68.8	64.6	51.4	44.3	60.5
1929	43.2	42.5	55.8	63.6	68.7	75.0	77.6	76.7	71.2	59.0	51.7	43.6	60.7
1930	44.0	50.6	48.8	62.2	71.9	75.2	81.6	76.7	76.2	59.2	48.8	38.6	61.2
1931	42.4	46.2	46.5	58.5	67.2	77.8	82.5	77.2	77.0	65.0	58.8	50.6	62.5
1932	51.9	51.5	49.0	60.3	68.5	77.5	81.6	78.6	72.0	62.6	48.0	46.4	62.3
1933	49.2	44.4	51.2	59.8	73.0	78.3	77.6	76.7	76.7	61.8	51.0	48.0	62.3
1934	45.0	36.0	47.7	59.8	67.7	77.8	79.9	78.6	74.8	61.5	53.6	42.2	60.4
1935	41.9	44.0	57.0	59.2	68.0	77.6	79.4	78.8	71.9	62.5	54.2	35.9	60.9
1936	37.7	40.3	55.0	57.3	72.6	77.4	80.9	79.4	74.4	63.8	49.6	45.1	61.1
1937	49.4	43.6	50.4	59.2	69.8	78.2	79.0	79.0	69.6	58.4	48.0	42.0	60.6
1938	42.4	49.2	57.4	61.2	70.2	74.4	78.2	80.2	73.0	62.8	54.7	43.2	62.2
1939	45.8	49.6	55.4	60.0	69.1	80.8	79.4	78.6	75.7	65.5	49.4	45.2	62.9
1940	31.4	43.8	48.6	59.1	67.9	78.2	78.8	77.6	71.4	63.0	52.0	47.0	59.9
1941	42.5	40.0	46.3	64.0	72.0	77.0	79.8	79.7	76.1	69.3	52.8	47.2	62.2
1942	42.3	40.2	53.2	64.1	70.5	78.6	81.1	77.8	73.2	63.4	53.3	41.5	61.6
1943	44.1	46.8	49.6	59.6	71.4	81.4	79.2	80.6	69.8	60.8	51.3	43.9	61.5
1944	43.1	46.9	51.0	60.0	73.5	80.8	77.4	76.6	73.3	61.6	49.8	39.4	61.1
1945	42.0	46.4	61.6	63.9	66.6	78.2	79.0	77.3	75.4	61.2	52.8	37.8	61.8

Average Temperature - Charlotte, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Summary of Period 1921-45													
Max.	51.9	53.4	61.6	64.1	73.5	80.8	82.5	80.7	80.5	69.3	58.8	50.6	62.5
Min.	31.4	36.0	45.0	57.2	66.0	73.3	77.0	74.8	67.6	58.4	47.8	35.9	59.4
Mean	42.9	45.3	52.1	60.5	69.2	77.5	79.5	78.1	73.8	62.4	51.5	44.0	61.4
Summary of Record													
Max.	51.9	53.4	61.6	64.8	75.2	80.8	82.5	81.9	80.5	69.9	58.8	54.7	62.5
Min.	31.4	32.9	43.1	52.8	63.6	70.8	74.7	74.0	67.0	56.8	45.1	33.4	58.3
Mean	42.3	44.1	52.2	59.9	69.1	76.3	78.8	77.4	72.4	61.6	51.5	43.2	60.7

Highest Temperature - Charlotte, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1878										78	72	61	
1879	70	61	79	82	90	92	101	93	86	87	80	70	101
1880	70	76	79	85	89	96	97	91	91	83	73	66	97
1881	61	69	76	85	94	97	100	100	94	87	75	70	100
1882	67	73	76	83	87	96	94	92	88	81	78	60	96
1883	62	76	74	82	86	94	98	94	92	85	78	67	98
1884	63	75	75	82	88	91	93	92	91	92	79	71	93
1885	71	65	69	85	87	90	95	94	89	74	76	66	95
1886	63	68	76	87	92	90	94	93	91	84	74	62	94
1887	69	71	80	89	91	102	102	95	94	84	74	63	102
1888	73	70	79	91	94	98	100	100	88	78	78	68	100
1889	70	69	75	86	95	94	96	90	89	82	77	76	96
1890	77	79	76	86	90	98	96	92	91	86	78	68	98
1891	69	78	70	85	90	95	90	95	90	88	78	68	95
1892	64	68	71	78	89	96	97	92	89	83	79	69	97
1893	67	67	77	89	90	90	100	93	91	85	74	68	100
1894	64	69	85	86	92	96	93	96	93	85	73	69	96
1895	66	69	84	83	97	100	97	94	98	80	76	68	100
1896	63	70	77	94	95	96	98	99	99	80	75	68	99
1897	62	74	80	86	88	96	98	95	97	89	73	69	98
1898	72	69	84	82	95	97	97	92	90	84	73	68	97
1899	66	73	76	86	92	99	100	98	98	82	72	66	100
1900	67	65	70	83	91	92	98	99	95	86	78	62	99
1901	69	71	75	83	91	94	95	90	88	84	77	68	95
1902	64	69	75	84	94	98	98	95	89	82	78	64	98
1903	66	69	77	83	95	90	96	96	90	84	76	58	96
1904	63	71	79	80	92	94	98	92	90	86	69	71	98
1905	65	60	76	82	90	95	95	96	91	86	73	62	96
1906	72	68	74	88	91	98	94	91	90	80	77	70	98
1907	77	64	91	81	87	92	97	92	90	79	73	66	97
1908	63	63	82	84	89	94	94	95	86	82	73	72	95
1909	75	72	78	83	89	94	92	95	87	80	77	69	95
1910	71	69	84	87	89	90	93	92	90	91	74	66	93
1911	72	75	76	80	95	98	95	97	92	91	71	68	98
1912	66	65	80	80	91	92	93	95	96	88	77	73	96
1913	71	70	79	83	91	95	102	98	90	83	77	67	102
1914	70	67	77	88	95	102	100	93	92	81	77	63	102
1915	62	67	68	92	89	91	100	95	93	83	78	66	100

Highest Temperature - Charlotte, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1916	71	68	77	86	96	93	89	93	93	85	78	69	96
1917	72	74	75	89	89	94	97	95	89	83	73	68	97
1918	56	75	82	83	96	98	96	99	90	86	75	71	99
1919	70	67	73	87	89	94	97	94	93	93	79	66	97
1920	68	63	77	86	86	96	95	90	89	84	77	64	96
1921	71	72	85	86	89	99	96	98	96	83	75	69	99
1922	68	73	79	86	88	95	96	94	94	87	74	72	96
1923	67	74	78	88	87	95	98	97	91	84	70	71	98
1924	67	66	79	85	90	100	96	98	97	82	79	75	100
1925	64	73	83	96	96	97	99	103	100	87	73	68	103
1926	67	73	77	85	96	98	103	97	94	91	73	70	103
1927	75	79	83	89	93	98	97	96	96	90	79	72	98
1928	75	66	81	79	92	98	97	97	92	87	76	67	98
1929	71	73	90	90	89	93	97	95	92	78	78	73	97
1930	73	82	72	92	90	102	102	100	97	83	75	64	102
1931	67	67	68	82	90	98	101	96	98	90	81	79	101
1932	71	75	79	85	89	95	100	101	99	82	68	68	101
1933	72	73	78	82	92	98	94	93	93	88	78	70	98
1934	70	65	75	85	88	96	96	96	91	81	78	67	96
1935	73	71	87	84	89	95	97	99	93	87	78	64	99
1936	65	76	83	89	93	101	101	95	92	83	78	67	101
1937	74	72	73	88	93	96	98	93	91	88	71	66	98
1938	70	76	83	87	93	91	95	97	93	87	79	70	97
1939	69	76	84	84	95	98	98	94	101	92	75	70	101
1940	57	66	75	85	96	96	103	94	95	87	78	70	103
1941	66	62	70	89	98	96	99	98	98	94	77	73	99
1942	69	64	80	89	90	97	99	98	94	82	79	70	99
1943	75	77	78	90	93	102	98	100	95	88	78	78	102
1944	79	76	82	85	94	102	99	93	97	89	73	62	102
1945	61	74	90	88	93	102	98	93	93	83	80	62	102
Summary of Period 1921-45													
Max.	79	82	90	96	98	102	103	103	101	94	81	79	103
Min.	57	62	68	79	87	91	94	93	91	78	68	62	96
Mean	69	72	80	87	92	98	98	97	95	86	76	69	100
Summary of Record													
Max.	79	82	91	96	98	102	103	103	101	94	81	79	103
Min.	56	60	68	78	86	90	89	90	86	74	68	58	93
Mean	68	70	78	86	91	96	97	95	93	85	76	68	98

Lowest Temperature - Charlotte, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1878										34	30	17	
1879	11	22	26	30	45	54	63	56	43	30	21	19	11
1880	26	24	33	33	42	52	63	59	48	33	18	-5	-5
1881	11	22	29	28	51	55	63	64	61	42	20	28	11
1882	16	26	30	36	45	61	60	61	54	40	28	10	10
1883	15	30	26	34	40	60	64	60	51	46	20	23	12
1884	5	18	23	38	47	52	61	58	49	36	29	11	5
1885	11	12	24	34	45	53	56	56	48	38	28	20	11
1886	-1	6	24	32	45	57	62	56	53	37	28	18	-1
1887	8	26	27	32	50	53	66	53	40	36	22	16	8
1888	17	16	20	37	40	55	60	55	38	37	30	20	16
1889	22	13	28	38	38	45	61	58	45	34	21	27	13
1890	25	28	19	36	42	64	57	57	50	32	29	24	19
1891	24	23	23	26	38	56	55	55	57	31	19	24	19
1892	18	20	21	31	44	60	58	62	49	34	20	18	18
1893	5	26	18	36	44	58	64	58	47	32	21	25	5
1894	24	16	20	35	41	46	59	57	53	39	24	2	2
1895	3	1	25	31	41	55	60	59	48	34	25	18	1
1896	14	6	26	34	49	55	60	55	47	34	33	18	6
1897	6	25	28	35	43	60	61	58	50	42	28	24	6
1898	15	12	28	30	42	58	58	65	53	34	22	15	12
1899	16	-5	14	31	47	55	58	63	44	36	32	12	-5
1900	9	9	23	30	44	57	60	67	52	42	28	25	9
1901	22	17	16	32	49	58	66	63	50	38	27	10	10.
1902	19	17	21	32	48	57	63	61	48	38	30	16	16
1903	18	17	31	32	51	49	61	64	49	34	18	18	17
1904	14	19	27	32	49	54	60	55	46	35	29	23	14
1905	12	8	34	33	53	55	65	55	56	38	26	23	8
1906	26	17	25	37	38	57	66	68	61	31	28	17	17
1907	21	18	32	28	46	55	65	60	53	34	30	22	18
1908	21	17	30	38	37	58	62	56	46	41	30	26	17
1909	14	16	32	33	42	63	61	59	47	33	30	12	12
1910	22	17	28	34	41	54	60	63	51	28	28	18	17
1911	22	21	26	37	44	61	62	62	59	41	25	26	21
1912	7	15	26	39	49	50	65	55	55	40	26	24	7
1913	27	21	28	41	44	47	61	63	46	34	24	23	21
1914	25	17	18	35	47	57	56	65	49	30	19	15	15
1915	23	22	27	31	53	52	62	61	48	37	29	26	22
1916	18	14	21	33	53	58	64	60	45	39	23	18	14
1917	19	7	26	36	41	53	63	61	45	31	24	1	1
1918	6	21	32	37	41	56	56	56	43	42	31	24	6
1919	15	19	34	30	47	57	56	60	50	48	28	21	15
1920	10	15	16	30	44	56	57	62	48	32	23	26	10
1921	21	22	35	34	43	56	63	58	60	38	29	28	21
1922	18	20	29	38	49	59	60	57	54	43	24	24	18
1923	26	18	23	24	40	57	62	56	53	40	30	25	18
1924	5	21	25	29	45	57	60	57	46	36	26	19	5
1925	21	27	17	34	41	63	63	56	60	31	22	10	10

Lowest Temperature - Charlotte, N. C.
Continued

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1926	21	23	16	33	46	52	60	65	54	33	26	18	16
1927	10	30	23	36	44	53	63	56	49	40	29	20	10
1928	6	20	28	32	43	54	64	66	47	39	22	26	6
1929	23	23	26	42	43	51	59	59	45	39	15	17	15
1930	22	22	20	41	48	52	62	53	55	34	23	19	19
1931	20	24	28	37	43	53	67	58	46	39	34	28	20
1932	28	31	17	38	50	60	58	62	52	39	23	16	16
1933	26	12	28	38	52	51	55	62	61	35	28	20	12
1934	8	8	22	34	47	61	67	60	55	40	30	18	8
1935	11	19	29	36	48	56	67	58	50	34	25	14	11
1936	9	11	32	29	50	55	57	60	48	38	22	23	9
1937	31	20	24	35	43	62	61	66	48	34	20	14	14
1938	15	28	27	35	51	56	60	63	49	42	22	25	15
1939	26	19	29	35	43	65	63	60	57	35	31	28	19
1940	6	21	22	28	39	59	60	61	43	39	26	19	6
1941	18	22	24	46	46	60	67	62	52	42	29	24	18
1942	11	18	29	33	51	60	66	55	40	35	29	15	11
1943	19	12	15	30	44	67	59	59	48	34	27	15	12
1944	22	16	25	28	43	58	60	55	55	38	32	22	16
1945	22	17	37	32	41	52	64	60	58	38	24	16	16

Summary of Period 1921-45

Max.	31	31	37	46	52	67	67	66	61	43	34	28	21
Min.	5	8	15	24	39	51	55	53	40	31	15	10	5
Mean	18	20	25	34	45	57	62	59	51	37	26	20	14

Summary of Record

Max.	31	31	37	46	53	67	67	68	61	48	34	28	22
Min.	-1	-5	14	24	37	45	55	53	38	28	15	-5	-5
Mean	17	18	25	34	45	56	61	59	50	37	26	19	12

Precipitation in Lenoir, Caldwell County, North Carolina:
Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1872	1.60	4.55	4.10	2.80	4.10	4.20	3.70	4.90	3.80	2.20	3.40	4.40	43.75
1873	7.20	9.00	2.75	2.35	11.50	3.70	5.80	8.70	2.90	1.60	3.40	2.30	61.20
1874	4.60	5.90	2.05	7.80	6.00	4.20	6.30	3.70	7.90	1.75	3.90	1.60	55.70
1875	3.40	6.75	10.20	3.70	1.94	6.00	4.70	7.50	4.50	.90	2.30	5.40	57.29
1876	.1.90	3.40	6.00	1.30	5.00	5.00	5.00	*3.50	*3.29	2.00	2.70	3.20	42.29
1877	3.70	.60	4.70	3.80	1.90	2.30	5.41	2.10	4.40	7.40	7.60	8.70	52.61
1878	9.60	4.80	2.80	4.80	4.10	4.10	3.10	9.00	8.50	2.00	4.30	4.65	61.75
1879	4.30	1.85	.50	3.50	5.80	3.70	1.80	8.50	1.50	8.40	.80	5.70	46.35
1880	2.60	3.45	6.30	5.20	3.10	2.00	*4.70	6.60	2.00	1.50	.50	3.62	41.57
1881	4.50	6.30	2.60	2.10	1.60	.90	1.90	3.20	5.10	4.80	6.10	5.30	44.40
1882	6.00	4.40	5.90	2.70	3.10	2.30	4.70	7.70	8.40	2.50	.50	3.80	52.00
1883	5.00	2.50	1.90	7.40	1.60	3.30	3.70	6.00	6.50	4.60	3.40	1.60	47.50
1884	3.50	4.90	9.40	4.50	2.40	10.30	1.70	3.30	.60	1.00	1.00	8.10	50.70
1885	4.90	3.30	1.70	1.30	10.10	3.80	6.70	3.20	3.30	9.50	5.20	3.20	56.20
1886	7.40	1.90	3.40	3.50	6.20	8.00	9.10	10.20	2.70	1.00	5.90	*4.70	64.00
1887	4.60	4.70	2.52	3.80	4.00	5.00	5.70	7.50	3.40	4.10	.90	3.80	50.02
1888	1.90	4.60	4.73	2.30	10.00	1.90	2.60	3.80	10.80	5.10	5.10	2.70	55.53
1889	3.50	2.40	1.40	2.20	6.60	5.90	9.00	4.20	5.30	.70	6.40	.50	48.10
1890	1.10	5.70	3.30	3.40	4.70	2.80	7.20	9.80	7.20	4.40	.00	2.60	52.20
1891	5.60	6.60	8.30	3.20	5.10	3.20	7.30	5.90	3.10	.80	4.50	4.00	57.60
1892	5.40	2.10	2.90	3.10	4.40	8.20	4.90	2.40	5.90	T	3.30	1.50	44.10
1893	2.31	5.20	1.10	2.50	5.90	3.50	3.20	7.50	9.00	8.30	2.20	1.20	51.91
1894	2.61	5.66	1.16	1.99	3.53	3.95	4.97	4.50	3.66	5.38	.64	6.21	44.26
1895	6.07	2.00	4.52	5.85	5.13	1.69	5.65	7.41	1.56	1.11	2.22	3.85	47.06
1896	2.32	4.73	2.87	2.69	2.80	2.70	7.83	3.34	5.74	1.01	6.61	1.80	44.44
1897	2.83	8.35	5.97	5.17	2.70	5.14	2.69	3.96	2.14	5.31	2.43	3.26	49.95
1898	3.21	.76	4.65	2.33	5.02	3.20	9.39	5.26	8.00	7.67	3.32	4.52	57.33
1899	3.94	7.26	11.84	4.19	3.07	4.52	3.00	5.71	3.15	1.62	.24	*4.48	53.02
1900	*2.70	*8.50	*3.90	*4.60	*2.90	*10.50	*4.50	*1.20	*2.90	*9.80	4.48	5.06	61.04
1901	3.70	1.70	6.84	9.59	10.39	11.67	*2.20	21.78	3.86	.90	.72	8.43	81.78
1902	2.80	6.66	4.23	1.73	2.33	6.00	*3.00	.90	4.17	4.82	4.11	*4.50	45.25
1903	5.06	8.80	11.15	5.36	.74	9.03	4.16	4.87	2.49	3.10	3.06	1.87	59.69
1904	1.61	2.60	4.20	1.31	5.11	3.74	*6.40	7.12	*1.90	*T	*3.20	4.20	41.39
1905	3.50	4.18	2.08	2.06	6.57	*4.00	*10.00	3.34	1.00	3.00	.00	7.95	47.68
1906	8.50	.36	*5.70	1.24	2.36	*8.40	*8.10	7.83	7.19	3.02	2.75	2.90	58.35
1907	.40	2.95	2.08	3.85	*4.40	*8.00	*6.00	2.03	5.48	.70	*4.00	4.90	44.79
1908	3.37	3.35	2.58	3.70	2.65	3.48	8.53	*8.50	*1.80	7.19	.94	4.11	50.20
1909	2.72	3.50	5.87	2.42	5.04	10.38	7.33	3.44	4.48	2.70	.88	3.59	52.35
1910	2.71	4.18	1.32	2.87	4.15	8.99	3.18	6.73	1.37	6.33	.30	3.66	45.79
1911	2.62	2.61	3.21	5.31	1.67	2.33	4.11	5.45	4.93	6.88	3.68	4.31	47.11
1912	1.72	3.57	7.55	6.59	10.00	6.45	5.17	1.73	*5.10	*2.00	*2.50	*2.60	54.98
1913	*4.00	*3.20	*7.50	2.72	3.30	3.95	*2.10	*3.50	*4.80	*6.00	*1.50	4.03	46.60
1914	2.51	2.60	2.46	3.45	*1.00	*2.50	*5.00	*4.50	*2.80	*6.00	3.53	8.10	44.45
1915	4.98	4.94	2.27	.40	4.07	2.89	3.15	6.51	3.89	2.26	3.32	*6.20	44.88
1916	*3.60	*3.70	*1.10	*2.00	*4.10	*6.60	*25.10	*6.40	6.30	2.57	.66	2.72	64.85
1917	3.73	2.02	7.52	2.85	1.70	4.08	6.51	2.61	4.82	3.19	.89	1.80	41.72
1918	6.29	1.31	1.89	5.26	1.52	3.92	4.34	5.46	4.49	13.25	3.97	6.80	58.50
1919	5.32	4.06	4.61	4.15	5.82	6.12	6.93	4.92	.81	3.64	1.67	3.83	51.88
1920	1.72	3.67	6.04	6.20	2.55	6.84	4.55	12.49	5.42	.50	5.32	5.61	60.91

*Interpolated

Precipitation in Lenoir, Caldwell County, North Carolina:
Monthly and annual (in inches and hundredths) (Continued)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1921	4.66	3.62	1.76	5.59	3.11	2.34	3.93	3.84	2.32	4.27	2.21	1.82	39.47
1922	3.95	4.57	7.07	3.33	5.47	3.78	8.70	5.08	.96	4.08	.18	3.35	50.52
1923	3.84	2.73	6.84	3.16	7.25	2.31	3.16	4.16	2.74	1.46	3.65	3.58	44.88
1924	5.21	3.03	2.74	5.14	4.27	2.11	7.39	4.00	9.20	1.24	1.29	5.85	51.47
1925	4.38	1.41	2.37	3.21	3.62	3.86	1.14	3.38	2.53	2.62	2.70	1.27	32.49
1926	5.52	3.58	3.54	2.35	1.13	1.95	6.00	6.63	2.30	1.97	3.33	4.64	42.94
1927	1.37	4.19	2.80	3.95	2.78	4.57	4.66	4.41	1.34	2.22	2.44	7.61	42.34
1928	1.50	2.67	4.23	4.04	5.25	5.92	4.17	14.54	6.87	4.11	.84	1.25	55.39
1929	2.72	6.70	6.44	3.63	3.00	4.23	7.15	1.83	5.67	6.66	4.25	3.11	55.39
1930	3.22	1.06	2.89	.87	2.39	3.62	2.34	4.35	4.85	1.08	4.66	3.41	34.74
1931	2.58	1.75	3.57	5.70	6.69	3.22	6.05	5.54	0.65	1.60	1.19	8.18	46.72
1932	6.25	2.13	5.45	2.42	4.83	4.05	2.50	8.75	2.70	8.00	5.30	7.41	59.79
1933	1.97	2.95	3.02	3.73	4.59	2.27	3.90	3.24	1.40	2.08	0.74	2.57	32.46
1934	2.64	3.88	7.62	4.80	4.31	4.99	5.07	8.36	5.41	4.11	3.99	1.94	57.13
1935	5.03	2.90	6.77	5.00	3.79	1.71	7.17	3.33	2.11	2.17	3.78	3.00	46.76
1936	7.51	4.21	5.61	5.40	1.02	1.60	4.06	5.91	2.86	9.07	1.41	7.23	56.09
1937	9.37	2.88	1.47	4.17	3.29	5.03	2.86	8.13	2.00	10.32	2.43	2.19	54.14
1938	3.92	1.70	2.96	2.57	5.59	7.18	8.10	4.06	2.74	0.55	4.58	1.81	45.76
1939	4.16	8.26	3.11	3.31	2.94	4.67	8.18	6.38	0.73	1.55	1.50	3.68	48.47
1940	2.39	3.19	3.11	2.55	2.43	3.49	5.17	12.00	0.31	1.82	3.46	3.20	43.12
1941	1.99	1.40	2.91	2.97	*2.00	4.62	7.62	5.20	0.89	1.39	2.02	4.81	37.82
1942	3.48	4.15	4.59	1.48	8.15	6.38	2.84	6.81	8.35	1.21	1.61	5.87	54.92
1943	4.88	2.28	4.45	3.66	3.55	5.53	5.68	4.87	1.75	1.13	2.86	2.96	43.60
1944	2.97	5.04	6.96	3.35	3.19	3.60	4.80	3.28	5.75	4.56	3.75	2.36	49.61
1945	2.58	6.45	3.91	6.93	4.94	4.96	6.02	4.13	12.25	3.20	3.59	5.44	64.40
Summary of Period 1921-45													
Max.	9.37	8.26	7.62	6.93	8.15	7.18	8.70	14.54	12.25	10.32	5.30	8.18	64.40
Min.	1.37	1.06	1.47	0.87	1.02	1.60	1.14	1.83	0.31	0.55	0.18	1.25	32.46
Mean	3.92	3.47	4.25	3.73	3.98	3.92	5.15	5.69	3.55	3.30	2.71	3.94	47.62
Summary of Record													
Max.	9.60	9.00	11.84	9.59	11.50	11.67	25.10	21.73	12.25	13.25	7.60	8.70	81.78
Min.	0.40	0.36	0.50	0.40	0.74	0.90	1.14	0.90	0.31	0.50	0.00	0.50	32.46
Mean	3.88	3.90	4.32	3.65	4.23	4.64	5.42	5.71	4.09	3.71	2.81	4.09	50.37

Average Temperature - Lenoir, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1889	38.5	35.7	47.2	58.2	64.7	70.8	75.4	71.2	67.0	54.9	48.5	49.6	56.8
1890	47.0	49.4	46.2	58.2	65.6	75.2	74.1	71.0	68.8	56.4	50.8	39.1	58.4
1891	38.6	45.6	42.6	57.2	63.2	74.0	72.0	73.6	68.8	53.6	43.8	42.7	56.3
1892	36.2	42.0	44.8	53.6	65.0	73.6	73.6	74.1	66.0	55.6	43.8	37.9	55.5
1893	27.6	42.0	46.1	59.1	64.1	71.8	77.0	72.8	67.4	57.8	44.7	40.8	55.9
1894	42.1	40.4	51.6	56.0	65.4	73.2	75.0	73.3	70.2	57.6	45.4	39.4	57.4
1895	35.6	30.7	46.2	55.4	65.8	74.3	74.8	74.7	72.2	53.0	48.8	39.8	56.0
1896	36.2	40.1	44.6	61.0	72.2	72.6	75.1	75.8	66.2	56.0	52.5	39.2	57.6
1897	35.4	42.8	49.8	55.4	64.2	73.3	76.0	72.5	69.2	60.8	47.2	41.3	57.3
1898	40.6	35.0	52.0	52.8	68.9	74.8	75.8	75.4	70.6	58.2	45.2	39.2	57.4
1899	37.8	34.8	46.3	54.4	68.6	75.5	76.8	77.2	67.0	59.7	48.8	—	—
1900	—	—	—	—	—	—	—	—	—	—	48.8	39.2	—

*Interpolated

Average Temperature - Lenoir, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1901	37.2	37.0	45.5	52.6	67.9	72.5	78.4	75.2	66.8	56.5	41.8	32.8	55.4
1902	37.0	33.7	47.8	51.8	69.4	70.8	75.3	74.8	66.0	58.3	53.1	38.1	56.3
1903	36.6	40.6	53.4	53.8	67.6	68.9	75.4	75.0	67.0	57.1	44.8	36.9	56.4
1904	32.8	36.6	47.5	50.6	64.1	71.8	75.0	75.8	68.4	55.9	48.0	38.8	55.4
1905	34.3	32.6	50.4	57.8	69.1	-----	74.7	73.6	71.8	59.3	46.5	39.4	-----
1906	43.6	45.6	44.2	59.3	66.6	-----	76.4	77.3	75.7	57.4	50.1	39.0	-----
1907	45.8	38.4	54.6	52.4	64.4	-----	-----	74.9	71.1	53.8	-----	39.9	-----
1908	36.6	38.1	53.4	61.1	66.8	-----	-----	-----	-----	57.0	50.1	42.8	-----
1909	43.2	45.2	47.3	57.8	63.6	73.9	73.0	73.0	66.0	54.0	52.1	35.0	57.0
1910	37.2	36.9	53.6	57.5	62.4	69.6	77.5	74.5	71.6	60.6	42.9	33.9	56.5
1911	42.3	45.3	46.9	52.8	67.2	75.1	75.6	76.8	73.9	60.7	44.0	42.0	58.6
1912	32.4	36.8	46.4	59.0	65.8	71.4	75.0	74.0	-----	-----	-----	-----	-----
1913	-----	-----	-----	57.0	67.6	72.6	-----	-----	-----	-----	-----	42.4	-----
1914	41.4	38.0	44.2	58.4	-----	-----	-----	-----	-----	-----	-----	46.1	37.6
1915	39.2	43.1	40.8	58.0	67.5	69.0	75.3	72.8	70.8	60.8	49.4	-----	-----
1916	-----	-----	-----	-----	-----	-----	-----	-----	66.7	57.5	48.4	37.3	-----
1917	42.6	40.2	47.3	59.4	59.7	72.0	76.0	74.1	67.0	52.9	45.2	29.4	55.5
1918	29.0	43.8	52.7	53.6	68.6	73.0	73.4	76.2	64.6	60.8	46.8	44.0	57.2
1919	40.6	39.2	49.8	56.4	66.0	73.2	76.6	74.2	68.4	66.6	49.9	39.0	58.3
1920	37.8	37.6	45.8	55.0	62.6	71.4	74.7	73.8	70.1	58.6	46.0	40.4	56.2
1921	39.4	42.4	56.0	58.2	63.4	75.2	77.2	73.4	75.0	56.9	51.6	43.2	59.3
1922	38.8	47.0	50.4	58.6	66.2	71.0	76.8	72.3	70.2	58.4	47.5	43.6	58.6
1923	41.4	39.8	49.0	55.0	63.4	74.0	75.0	75.6	70.2	57.4	46.8	46.6	57.8
1924	35.4	38.0	44.5	56.1	61.8	74.6	74.3	75.8	64.8	57.0	48.2	39.9	55.9
1925	38.8	46.6	50.6	60.4	62.5	76.2	78.4	74.0	75.6	56.4	45.2	39.4	58.7
1926	37.0	43.2	42.2	55.4	66.3	71.7	77.0	77.4	73.0	59.6	43.1	40.4	57.2
1927	39.8	48.8	50.0	57.8	66.6	71.0	75.3	72.2	69.6	59.8	50.6	41.4	58.6
1928	38.0	39.0	48.0	53.8	63.8	70.4	76.7	76.9	65.2	60.0	47.8	37.7	56.4
1929	40.4	40.3	51.9	59.9	65.0	71.4	73.7	74.2	68.8	56.4	49.8	41.3	57.8
1930	41.8	46.8	46.6	59.0	67.4	71.6	78.4	73.7	73.2	55.8	45.4	35.5	57.9
1931	41.2	44.4	44.4	56.1	63.8	72.0	78.0	74.6	74.3	61.0	54.8	48.7	59.5
1932	49.0	50.3	47.1	57.8	65.0	74.0	78.2	75.4	69.6	59.0	47.0	43.7	59.7
1933	48.1	42.8	49.2	56.8	71.4	77.4	76.6	74.7	73.4	60.0	49.3	48.4	60.7
1934	44.1	37.4	46.6	56.8	65.4	73.4	77.4	75.8	71.4	59.0	49.8	42.2	58.3
1935	41.5	41.5	50.6	-----	63.1	71.6	76.4	75.4	71.2	60.2	52.4	-----	-----
1936	35.0	38.5	48.4	54.0	65.6	74.5	79.1	76.0	72.4	61.4	48.4	43.4	58.1
1937	49.4	42.0	48.4	57.0	65.7	75.6	75.6	76.6	68.3	56.0	46.6	40.8	58.5
1938	40.8	47.6	55.6	58.8	67.3	71.2	75.6	77.4	71.0	59.8	51.8	40.8	59.8
1939	42.4	46.6	52.8	57.2	65.8	76.7	75.7	74.8	72.0	62.2	46.4	42.1	59.6
1940	29.6	41.4	45.6	56.9	65.0	72.3	73.5	72.2	66.0	57.6	46.1	42.2	55.7
1941	37.7	35.8	42.2	58.8	67.6	71.8	74.6	74.2	70.3	62.2	45.9	41.2	56.9
1942	36.9	35.7	48.3	58.0	64.3	72.0	76.7	74.8	69.7	60.1	50.4	39.4	57.2
1943	42.0	43.4	46.6	56.0	68.0	77.6	76.0	77.2	67.8	58.8	47.2	41.7	58.5
1944	41.0	46.1	48.9	57.6	69.5	75.4	74.8	74.1	71.5	58.5	46.2	36.6	58.1
1945	39.8	43.8	58.3	60.6	63.0	73.0	75.5	74.6	72.5	57.3	50.4	34.6	58.6
Summary of Period 1921-45													
Max.	49.4	50.3	58.3	60.6	71.4	77.6	79.1	77.4	75.6	62.2	54.8	48.7	60.7
Min.	29.6	35.7	42.2	53.8	61.8	70.4	73.5	72.2	64.8	55.8	43.1	34.6	55.7
Mean	40.4	42.8	48.2	57.4	65.5	73.5	76.3	74.9	70.7	58.8	48.1	41.4	58.2
Summary of Record													
Max.	49.4	50.3	58.3	61.1	72.2	77.6	79.1	77.4	75.7	66.6	54.8	49.6	60.7
Min.	27.6	30.7	40.8	50.6	59.7	68.9	72.0	71.0	64.6	52.9	41.8	29.4	55.4
Mean	39.2	41.0	48.4	56.7	65.8	73.1	75.8	74.6	69.7	58.1	47.8	41.0	57.5

Highest Temperature - Lenoir, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1880							92	88	85	80	67	59	---
1881	52	63	68	77	85	93	98	94	92	83	75	66	98
1882	64	67	74	80	81	90	88	87	83	77	77	58	90
1883	55	71	67	76	85	89	92	87	84	78	75	64	92
1884	54	66	70	--	74	86	88	86	89	80	68	64	---
1885	62	--	68	81	--	87	90	88	82	68	66	64	---
1886	60	56	67	83	85	84	87	88	83	80	66	52	88
1887	62	74	74	93	85	93	95	84	85	77	67	--	---
1888	--	62	69	80	83	90	91	93	79	74	74	59	---
1889	60	62	67	85	89	84	87	82	83	77	71	70	89
1890	72	72	70	80	83	90	90	84	86	79	74	62	90
1891	67	73	67	82	84	90	84	88	84	81	71	65	90
1892	62	63	67	77	85	88	90	86	80	76	67	65	90
1893	58	65	72	87	84	84	92	89	82	79	69	62	92
1894	62	63	83	79	85	91	88	90	87	79	67	64	91
1895	62	66	78	80	90	92	87	88	88	74	75	62	92
1896	56	65	70	88	88	87	91	91	86	75	72	62	91
1897	58	72	74	82	80	90	92	89	92	82	70	63	92
1898	69	64	80	79	88	90	92	85	83	82	67	59	92
1899	58	65	69	80	87	88	93	92	89	77	67	--	---
1900	--	--	--	--	--	--	--	--	--	--	83	60	--
1901	65	65	75	88	91	93	96	94	90	84	79	67	96
1902	68	67	77	84	93	96	96	96	93	84	79	--	---
1903	64	70	76	82	96	89	93	94	90	84	80	60	96
1904	63	72	77	81	90	93	97	91	93	90	73	59	97
1905	69	60	76	85	90	--	94	93	93	90	75	60	---
1906	65	70	73	86	96	--	92	94	92	82	79	65	---
1907	79	61	93	87	94	--	--	96	95	85	--	68	---
1908	65	64	82	87	92	--	--	--	--	87	76	76	---
1909	77	72	71	90	89	91	90	95	84	82	78	71	95
1910	75	66	86	91	93	92	95	92	92	95	68	60	95
1911	75	75	83	82	95	100	98	99	92	92	72	74	100
1912	62	65	85	87	92	95	93	97	--	--	--	--	---
1913	--	--	--	85	92	97	--	--	--	--	--	72	---
1914	74	68	79	92	--	--	--	--	--	--	82	61	---
1915	62	66	66	91	89	91	97	96	94	84	80	--	---
1916	--	--	--	--	--	--	--	--	94	87	79	71	---
1917	75	80	81	92	94	97	98	94	92	85	76	70	98
1918	60	79	83	83	98	100	95	100	88	89	75	74	100
1919	69	63	78	88	88	94	99	94	96	89	80	72	99
1920	68	59	80	86	87	95	95	93	90	84	79	65	95
1921	73	73	90	87	90	98	96	99	97	85	79	70	99
1922	71	73	81	91	87	94	95	92	94	88	78	74	95
1923	65	70	81	85	88	94	95	95	90	88	71	75	95
1924	64	66	76	85	88	99	95	97	94	85	79	80	99
1925	63	72	85	95	93	97	98	103	99	84	73	71	103
1926	67	75	79	86	96	97	106	95	92	88	70	69	106
1927	76	79	82	93	94	100	96	95	95	88	78	75	100
1928	76	69	83	82	92	95	97	94	88	87	76	62	97
1929	69	70	86	89	86	92	93	91	90	79	77	73	93
1930	73	83	74	92	89	99	101	101	93	82	76	64	101

Highest Temperature - Lenoir, N. C.
Continued

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1931	71	67	68	82	88	97	--	95	98	88	81	78	---
1932	77	80	77	86	90	95	100	99	95	81	75	69	100
1933	71	76	80	83	93	99	97	94	94	90	77	72	99
1934	69	68	78	87	90	95	98	92	89	81	79	64	98
1935	68	66	78	--	84	95	95	97	91	86	81	--	---
1936	62	75	73	85	88	--	102	97	94	80	77	67	---
1937	74	74	74	90	95	95	97	94	92	89	79	69	97
1938	69	75	82	85	91	90	94	98	93	88	80	67	98
1939	71	75	82	88	93	96	95	93	97	91	75	73	97
1940	56	68	78	85	96	96	98	88	87	83	70	63	98
1941	66	58	69	89	--	86	93	91	91	90	73	65	---
1942	64	60	75	86	84	94	97	97	92	83	77	60	97
1943	75	74	77	84	89	96	94	99	96	85	77	75	99
1944	79	79	81	86	91	101	96	95	95	87	74	64	101
1945	59	71	91	88	90	98	97	95	93	82	82	63	98

Summary of Period 1921-45

Max.	79	83	91	95	96	101	106	103	99	91	82	80	106
Min.	56	58	68	82	84	88	93	88	87	79	70	60	93
Mean	69	72	79	87	90	96	97	95	93	86	77	69	99

Summary of Record

Max.	79	83	91	95	98	101	106	103	99	95	83	80	106
Min.	52	56	66	76	74	84	84	82	79	68	66	52	88
Mean	66	69	77	85	89	93	94	93	90	83	75	66	96

Lowest Temperature - Lenoir, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1880							68	61	43	26	16	-16	---
1881	5	12	20	27	50	59	58	64	62	38	17	20	5
1882	12	18	31	38	40	53	56	62	54	36	23	6	6
1883	5	22	22	32	30	52	60	55	47	42	15	17	5
1884	3	11	12	--	--	45	56	61	45	30	23	10	---
1885	11	--	15	24	--	52	52	55	42	32	22	13	---
1886	-12	4	26	32	42	57	60	56	53	35	22	15	-12
1887	3	25	26	29	51	49	48	49	41	33	16	--	---
1888	--	12	19	34	35	54	62	52	32	34	27	15	---
1889	14	8	27	30	35	43	63	56	40	30	23	19	8
1890	20	26	19	33	39	60	55	52	52	31	23	18	18
1891	19	19	22	26	40	58	58	58	48	29	15	17	15
1892	14	18	22	29	44	62	58	60	44	29	15	10	10
1893	-15	22	12	32	47	58	61	54	46	28	15	19	-15
1894	20	18	18	32	43	50	62	59	47	33	18	-1	-1
1895	1	0	24	29	45	57	61	56	46	30	23	13	0
1896	11	4	19	34	56	56	56	55	42	30	30	15	4
1897	0	18	27	33	41	52	56	57	44	36	22	21	0
1898	16	11	25	29	46	58	60	67	50	32	22	7	7
1899	18	-8	14	31	47	53	54	63	40	36	28	--	---
1900	--	--	--	--	--	--	--	--	--	--	22	19	---
1901	16	11	8	32	43	42	61	56	40	31	15	-9	-9
1902	10	9	20	27	41	47	52	51	37	31	26	--	---

Lowest Temperature - Lenoir, N. C.
Continued

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1903	10	9	23	19	42	42	51	58	38	—	12	10	—
1904	5	5	22	22	37	45	51	48	41	22	19	14	5
1905	6	2	24	27	45	—	52	54	46	26	15	13	2
1906	10	19	16	27	29	—	57	60	55	27	12	10	—
1907	11	15	26	19	38	—	—	49	41	25	—	15	—
1908	13	0	24	25	36	—	—	—	—	31	20	14	—
1909	10	9	22	23	30	51	50	47	34	23	20	4	4
1910	12	3	20	31	30	37	53	56	41	19	17	8	3
1911	14	14	18	25	33	47	46	50	56	31	17	15	14
1912	2	5	17	25	38	42	53	49	—	—	—	—	—
1913	—	—	—	31	35	42	—	—	—	—	—	12	—
1914	15	11	11	29	—	—	—	—	—	—	12	5	—
1915	17	18	20	27	45	42	52	50	41	28	21	—	—
1916	—	—	—	—	—	—	—	—	38	30	17	-2	—
1917	12	2	11	27	33	39	53	45	38	22	15	-18	-18
1918	-6	12	22	25	30	47	47	47	34	32	22	18	-6
1919	6	13	24	24	41	52	46	48	37	46	18	13	6
1920	-1	3	5	23	35	48	53	59	49	24	15	17	-1
1921	14	20	27	24	33	50	59	52	50	25	23	21	14
1922	13	14	25	30	34	48	61	47	43	29	13	18	13
1923	20	9	17	17	32	45	54	52	47	29	20	17	9
1924	2	11	17	21	37	47	53	54	38	24	17	9	2
1925	14	15	11	24	32	53	53	46	53	24	15	1	1
1926	6	13	14	25	33	48	47	58	54	27	16	12	6
1927	3	20	15	27	36	50	53	50	35	31	19	11	3
1928	0	10	15	22	37	43	52	59	34	29	18	12	0
1929	12	18	18	34	41	47	49	50	41	30	12	8	8
1930	13	13	20	28	39	44	52	45	45	24	13	6	6
1931	12	19	20	35	39	43	—	52	39	28	23	19	—
1932	21	19	8	31	37	50	49	56	42	31	15	15	8
1933	14	6	17	32	43	52	52	52	44	30	16	17	6
1934	2	7	13	30	41	49	57	59	49	27	20	10	2
1935	14	11	19	--	39	47	61	52	41	27	16	—	—
1936	5	5	29	25	42	—	56	51	45	30	14	22	—
1937	28	17	16	26	41	58	49	62	44	25	12	9	9
1938	10	21	22	27	44	51	53	56	44	30	15	18	10
1939	14	15	24	27	32	57	56	54	48	26	21	16	14
1940	-3	13	13	26	32	48	49	53	32	35	21	10	-3
1941	12	13	17	36	—	48	59	55	43	29	18	17	—
1942	-4	9	20	23	38	48	57	51	33	29	19	12	-4
1943	12	3	9	22	31	61	55	53	39	29	20	6	3
1944	18	20	19	26	37	52	54	52	48	--	25	10	—
1945	14	12	30	25	35	45	53	47	49	28	21	6	6
Summary of Period 1921-45													
Max.	28	21	30	36	44	61	61	62	54	35	25	22	14
Min.	-4	3	8	17	31	43	47	45	32	24	12	1	-4
Mean	11	13	18	27	37	49	54	53	43	28	18	13	6
Summary of Record													
Max.	28	26	31	38	56	62	68	67	62	46	30	22	18
Min.	-15	-8	5	17	29	37	46	45	32	19	12	-18	-18
Mean	9	12	19	28	39	50	55	54	43	30	19	11	4

Precipitation in Marion, McDowell County, North Carolina:
Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1888	---	---	---	0.67	12.67	4.70	1.50	---	---	---	---	---	---
1889	---	---	---	---	---	---	---	---	---	---	3.47	1.68	---
1890	2.10	6.00	4.10	2.90	4.80	2.30	8.26	4.83	3.52	6.03	.70	2.18	47.72
1891	5.90	6.43	---	---	---	---	---	---	---	---	---	---	---
1892	6.30	3.00	5.00	2.80	5.00	4.77	5.52	3.56	5.10	.49	2.30	.76	44.60
1893	4.25	7.37	1.35	3.00	5.40	5.32	3.20	6.91	9.74	8.75	5.22	1.74	62.25
1894	2.33	5.40	.67	1.23	2.12	1.94	4.30	4.40	3.10	3.90	.40	6.86	36.65
1895	5.05	2.25	5.00	4.45	4.90	2.20	4.00	5.10	1.40	1.00	2.10	2.70	40.45
1896	2.25	3.28	2.26	2.62	2.98	8.36	7.28	2.02	3.43	1.46	9.60	1.85	47.39
1897	3.26	4.61	6.04	6.74	3.34	4.58	6.98	2.74	.59	5.48	2.90	3.86	51.12
1898	4.52	.73	4.06	2.81	3.68	3.88	10.07	10.84	9.62	8.07	3.27	5.54	67.09
1899	3.89	10.05	12.68	4.33	3.34	5.76	2.12	5.64	4.41	2.00	.89	5.28	60.39
1900	3.59	9.22	6.65	9.70	1.96	10.50	3.52	2.70	3.48	9.69	4.04	4.74	69.79
1901	4.10	2.06	8.85	9.33	12.63	10.61	3.00	18.00	4.10	1.59	1.16	11.84	87.27
1902	2.37	7.80	5.70	2.13	2.89	5.98	2.99	1.00	4.59	3.38	4.60	7.23	50.66
1903	5.07	11.57	9.26	5.17	1.59	10.13	1.74	6.49	3.15	2.79	2.85	1.22	61.03
1904	2.48	3.36	7.04	2.24	6.96	3.71	7.17	5.90	2.20	1.10	3.91	2.94	49.01
1905	4.25	7.69	2.32	1.95	7.31	2.40	10.60	5.90	1.60	3.26	.32	8.25	55.85
1906	10.21	1.14	6.59	3.17	3.34	11.00	5.90	8.10	10.00	5.70	3.40	4.12	72.67
1907	.44	2.12	4.23	3.64	4.20	5.84	6.13	3.45	9.22	.66	5.24	7.78	52.95
1908	4.15	6.94	2.90	4.94	3.82	4.93	8.29	8.68	1.87	6.60	.93	4.96	59.01
1909	3.84	5.24	5.62	3.06	10.27	11.99	6.71	6.07	4.79	2.64	.87	4.38	65.48
1910	3.08	4.15	1.49	2.47	5.29	8.43	6.10	9.61	4.75	3.80	.20	5.34	54.71
1911	2.65	2.24	2.94	7.33	1.82	1.80	4.19	5.16	.91	6.67	3.98	4.24	43.93
1912	1.73	2.53	8.02	3.99	4.13	5.62	6.30	2.96	6.56	1.93	3.32	2.96	50.05
1913	3.76	3.71	8.44	4.10	6.64	7.25	4.67	5.80	5.89	4.40	1.27	4.35	60.28
1914	2.38	4.29	2.69	4.80	1.07	4.36	6.33	8.21	3.10	6.38	4.03	11.21	58.85
1915	6.58	6.14	3.59	.36	6.75	3.94	3.45	7.41	4.60	6.19	3.90	7.72	60.63
1916	3.50	4.29	1.34	2.16	5.72	7.46	24.42	6.48	2.62	4.46	.97	4.07	67.49
1917	3.45	3.69	7.26	3.53	2.36	4.45	8.31	1.98	6.32	3.33	.57	2.25	47.50
1918	5.80	2.38	2.15	5.34	4.01	5.92	5.95	4.39	2.90	13.04	3.65	9.92	65.45
1919	5.79	4.55	5.52	2.79	8.16	9.68	6.24	3.84	.90	4.72	2.18	2.54	56.91
1920	2.54	3.88	7.36	7.38	2.51	6.86	6.72	25.00	2.71	.58	5.41	7.43	78.38
1921	6.69	4.49	2.94	5.92	2.37	6.38	5.23	5.53	2.93	7.76	3.57	3.17	56.98
1922	4.35	4.73	8.74	4.21	11.01	5.29	10.08	7.18	1.76	4.94	.25	5.19	67.73
1923	4.23	2.40	6.44	3.60	8.37	2.52	5.66	4.35	4.97	1.68	3.38	3.35	50.95
1924	7.39	3.20	2.28	4.60	4.06	3.95	9.01	1.64	8.17	1.49	.89	5.58	52.26
1925	4.80	1.57	2.00	2.32	1.48	2.20	.98	2.06	2.83	3.18	3.31	2.30	29.03
1926	4.94	3.58	3.60	3.00	2.28	1.11	6.14	4.94	4.10	1.98	7.16	5.32	48.15
1927	.90	3.74	2.92	3.41	4.26	6.10	3.51	3.19	3.17	3.71	3.91	7.13	45.95
1928	1.57	3.04	4.25	4.02	6.57	3.75	6.44	9.37	9.11	5.61	1.12	1.14	55.99
1929	3.61	4.87	6.90	3.22	4.12	5.89	5.42	5.47	10.27	8.76	4.51	2.80	65.84
1930	3.00	1.70	3.00	2.10	1.61	2.83	1.07	2.37	3.24	.80	3.91	5.50	31.13
1931	3.15	2.49	7.18	5.02	4.59	1.39	4.78	5.56	1.07	1.47	1.08	9.55	47.33
1932	---	---	---	---	---	---	---	---	---	---	---	---	---
1933	---	---	---	---	---	---	---	---	---	---	---	---	---
1934	3.07	4.28	7.20	3.36	5.15	5.38	7.57	5.66	5.00	4.75	6.24	3.01	60.67
1935	5.75	2.75	6.21	4.61	3.22	1.90	7.05	4.36	3.87	1.88	5.39	2.52	49.51

Precipitation in Marion, McDowell County, North Carolina:
Monthly and annual (in inches and hundredths) Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1936	9.78	4.04	6.50	6.15	0.83	1.43	7.01	11.70	4.97	7.36	1.25	7.23	68.25
1937	9.62	2.92	2.12	5.31	2.58	4.83	3.76	6.36	3.90	9.58	2.07	3.14	56.19
1938	3.15	1.56	4.15	---	---	---	---	---	3.01	0.17	4.15	2.21	---
1939	6.09	9.58	1.10	3.29	2.41	2.03	6.57	5.73	0.56	0.80	0.99	1.65	40.80
1940	2.19	2.41	3.59	2.18	1.35	5.33	6.99	17.60	0.10	2.52	3.49	3.78	51.53
1941	---	---	3.66	3.31	0.84	6.63	12.21	5.88	1.70	1.95	2.83	7.46	---
1942	2.76	3.75	5.25	1.79	10.84	5.69	8.05	8.14	5.05	1.33	1.93	7.54	62.12
1943	5.65	1.92	4.04	2.57	3.63	6.68	7.35	0.20	2.09	1.19	2.03	3.41	40.76
1944	3.22	4.49	7.14	4.12	2.49	3.48	3.73	2.18	6.93	3.84	2.90	2.43	46.95
1945	2.03	4.23	4.70	5.37	5.22	3.34	3.90	3.20	12.23	3.37	3.52	6.86	57.97
Summary of Period 1921-45													
Max.	9.78	9.58	8.74	6.15	11.01	6.68	12.21	17.60	12.23	9.58	7.16	9.55	68.25
Min.	0.90	1.57	1.10	1.79	0.83	1.11	0.98	0.20	0.10	0.17	0.25	1.14	29.03
Mean	4.45	3.53	4.60	3.79	4.06	4.01	6.02	5.58	4.39	3.48	3.04	4.45	51.72
Summary of Record													
Max.	10.21	11.57	12.68	9.70	12.67	11.99	24.42	25.00	12.23	13.04	9.60	11.84	87.27
Min.	0.44	0.73	0.67	0.36	0.83	1.11	0.98	0.20	0.10	0.17	0.20	0.76	29.03
Mean	4.14	4.26	4.85	3.86	4.55	5.18	6.12	6.08	4.31	3.97	2.92	4.71	55.13

Average Temperature - Marion, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1891	40.4	46.1	---	---	---	---	---	---	---	---	---	---	---
1892	---	42.4	45.8	55.6	64.1	74.4	74.0	74.6	---	56.8	45.5	39.4	---
1893	29.7	43.8	47.0	59.5	---	71.2	---	72.2	68.3	57.6	45.7	39.8	---
1894	43.2	41.0	52.4	54.4	64.3	72.0	---	---	---	---	---	---	---
1895	36.5	30.8	49.2	54.3	---	---	---	---	---	---	---	---	---
1896	38.2	44.4	48.8	64.3	72.7	71.4	75.1	75.6	69.2	57.8	54.8	42.1	59.5
1897	37.3	45.9	51.8	57.3	62.8	72.4	74.4	72.5	69.1	61.7	48.8	42.7	58.1
1898	42.6	38.9	52.8	52.8	67.2	73.6	74.6	73.6	66.5	57.5	44.8	39.8	57.0
1899	39.0	36.4	47.2	55.7	69.1	74.8	76.2	77.8	68.6	60.0	51.3	38.2	57.9
1900	38.8	36.2	46.9	57.8	66.6	72.8	78.2	80.1	75.2	63.3	51.2	41.5	59.0
1901	40.9	38.6	48.4	52.0	65.5	73.0	78.2	76.8	---	58.2	44.2	38.0	---
1902	37.4	35.0	48.9	55.4	69.6	72.8	76.5	75.8	67.8	60.0	54.7	39.9	57.8
1903	38.7	44.0	53.2	56.8	66.8	68.3	76.4	76.0	68.3	59.3	45.6	35.8	57.4
1904	35.1	38.1	49.2	53.4	64.6	72.3	74.2	---	---	---	47.8	40.4	---
1905	36.2	33.4	54.1	58.6	69.0	73.8	---	---	---	58.3	50.3	40.4	---
1906	43.8	42.2	45.2	60.6	66.3	72.0	---	---	---	55.3	50.4	43.6	---
1907	49.3	41.1	57.8	52.2	64.6	69.6	77.0	74.6	70.6	56.2	46.8	40.9	58.4
1908	38.8	36.2	56.2	61.8	67.4	72.0	75.6	74.2	68.6	58.9	52.4	44.4	58.9
1909	44.7	47.3	49.0	59.7	63.9	74.2	74.2	74.4	67.8	57.1	55.0	37.2	58.7
1910	39.1	38.2	55.0	59.0	63.2	69.2	75.8	74.4	72.0	62.2	45.8	36.0	57.5
1911	44.8	47.0	48.0	53.8	67.8	75.6	74.6	75.4	73.6	61.8	43.6	43.5	59.1
1912	33.7	37.4	47.4	59.8	65.4	69.8	74.2	72.4	71.5	60.0	46.7	42.4	56.7
1913	46.0	42.1	50.6	56.6	66.6	72.0	77.0	74.1	66.1	57.8	50.4	43.4	58.6
1914	41.4	38.4	44.9	58.0	66.5	76.4	75.0	75.1	67.3	60.2	46.7	37.4	57.3
1915	38.4	42.4	41.4	59.0	66.2	69.4	75.4	72.4	69.7	61.2	49.8	38.4	57.0

Average Temperature - Marion, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1916	44.8	41.9	47.8	56.2	68.2	70.8	73.9	75.0	66.6	57.9	48.8	40.0	57.7
1917	43.4	40.4	47.7	60.2	60.0	69.8	73.8	72.5	65.9	53.0	47.6	31.4	55.5
1918	30.0	46.1	54.7	54.3	67.8	71.5	71.8	75.3	65.2	52.4	47.3	44.6	57.6
1919	41.4	39.8	50.6	57.4	64.4	72.0	75.6	73.8	69.1	67.5	50.5	40.1	58.5
1920	39.0	38.3	46.3	55.7	62.4	71.2	73.8	71.9	69.8	60.2	48.2	40.6	56.4
1921	41.4	42.8	57.6	58.7	63.4	74.0	75.6	73.2	74.6	58.4	52.4	45.0	59.8
1922	39.7	47.5	50.7	60.4	65.6	73.5	74.9	71.2	69.6	58.2	49.5	45.4	58.8
1923	43.6	41.2	50.8	56.0	63.2	73.1	73.6	75.0	70.0	57.8	47.2	46.8	58.2
1924	34.7	37.3	48.2	55.2	60.4	72.9	73.0	75.5	65.6	59.3	50.6	41.9	56.2
1925	---	48.6	52.4	61.5	62.8	76.2	76.9	74.4	76.7	56.4	47.8	---	---
1926	---	---	---	---	66.6	71.6	77.0	76.9	73.0	60.9	44.2	---	---
1927	41.9	50.0	50.4	58.5	66.4	69.4	74.5	72.4	70.0	61.6	51.7	40.8	59.0
1928	39.0	38.8	49.5	54.8	62.8	70.3	75.2	74.8	65.4	59.7	48.8	39.2	56.5
1929	38.8	39.1	52.0	59.4	64.0	69.9	73.6	72.7	66.8	54.8	50.2	---	---
1930	---	---	---	---	69.2	72.0	78.6	73.8	72.9	56.4	46.8	35.4	---
1931	39.2	43.3	43.8	56.4	65.5	75.1	77.9	73.8	74.0	60.0	54.4	---	---
1932	---	---	47.0	---	---	---	---	---	69.4	57.8	47.2	---	---
1933	---	---	---	56.9	69.5	75.1	75.2	74.4	73.4	58.4	47.8	47.2	---
1934	42.2	36.1	45.8	58.3	65.5	74.2	78.7	75.3	70.6	58.8	50.8	40.1	58.0
1935	41.0	42.2	55.0	56.7	64.8	72.0	76.0	75.1	69.4	59.0	51.6	35.0	58.2
1936	35.2	38.9	50.0	56.4	68.2	74.6	78.1	75.8	70.8	60.4	46.6	42.2	58.1
1937	49.6	41.4	47.6	56.0	65.7	74.8	75.2	75.8	66.9	54.7	45.4	39.4	57.7
1938	39.4	47.1	54.7	---	---	---	---	---	70.5	60.0	51.0	40.6	---
1939	42.5	46.1	52.1	56.8	65.8	76.8	76.0	75.1	72.0	61.4	45.8	43.6	59.5
1940	28.2	38.8	45.3	53.4	65.9	73.7	73.9	72.8	65.0	57.9	47.3	43.7	55.5
1941	40.8	35.5	43.0	59.4	66.8	71.6	74.6	74.1	70.2	63.2	48.6	45.0	57.7
1942	39.8	38.8	50.0	61.2	66.8	74.8	77.3	74.0	68.4	59.1	49.0	39.7	58.2
1943	43.6	43.8	45.4	56.6	68.0	77.2	75.6	77.2	66.6	58.2	47.8	42.3	58.6
1944	41.0	45.7	46.8	56.0	68.6	75.8	74.0	73.4	69.6	58.4	46.8	38.3	57.9
1945	40.6	45.0	60.0	60.8	63.9	73.8	75.9	75.0	72.3	57.9	50.4	34.3	59.2
Summary of Period 1921-45													
Max.	49.6	50.0	60.0	61.5	69.5	77.2	78.7	77.2	76.7	63.2	54.4	47.2	59.8
Min.	28.2	35.5	43.0	53.4	60.4	69.4	73.0	71.2	65.0	54.7	44.2	34.3	55.5
Mean	40.1	42.3	49.9	57.6	65.6	73.6	75.7	74.4	70.1	58.7	48.8	41.3	58.1
Summary of Record													
Max.	49.6	50.0	60.0	64.3	72.7	77.2	78.7	80.1	76.7	67.5	55.0	47.2	59.8
Min.	28.2	30.8	41.4	52.0	60.0	68.3	71.8	71.2	65.0	53.0	43.6	31.4	55.5
Mean	39.9	41.2	49.7	57.2	65.8	72.8	75.5	74.5	69.6	59.0	48.7	40.6	57.9

Highest Temperature - Marion, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1891	74	77	—	—	—	—	—	—	—	—	—	—	—
1892	—	65	74	89	90	92	94	91	—	83	70	69	—
1893	61	72	80	90	—	89	—	94	90	89	73	71	—
1894	64	65	81	85	88	94	—	—	—	—	75	68	—
1895	63	74	85	82	—	—	—	—	—	—	—	—	—
1896	70	73	76	94	92	90	94	96	98	79	77	71	98
1897	63	76	80	87	86	92	94	93	98	90	77	67	98
1898	75	72	88	85	92	97	94	89	85	83	71	67	97
1899	66	72	75	88	95	95	99	100	95	88	78	64	100
1900	70	65	74	87	94	91	100	103	100	86	80	63	103
1901	68	74	75	87	91	92	97	98	—	84	79	69	—
1902	69	64	77	85	95	95	99	100	93	82	80	67	100
1903	65	70	75	86	98	90	96	96	92	86	79	58	98
1904	63	70	78	83	91	96	97	—	—	—	73	66	—
1905	67	60	79	85	93	93	—	—	—	86	77	68	—
1906	68	69	73	89	93	94	—	—	—	80	77	70	—
1907	77	66	95	85	90	90	100	93	91	83	73	67	100
1908	66	60	85	88	90	95	96	94	93	88	80	80	96
1909	81	75	72	89	89	92	94	97	90	87	83	76	97
1910	80	70	89	93	93	91	97	93	95	93	77	62	97
1911	81	80	81	81	97	101	98	96	92	91	69	66	101
1912	65	66	85	81	90	94	92	93	94	88	80	72	94
1913	73	72	79	84	91	93	101	92	88	83	77	71	101
1914	70	65	80	89	96	97	97	92	90	83	77	68	97
1915	60	67	69	91	89	88	96	95	90	81	78	62	96
1916	69	70	79	88	96	91	89	91	91	84	77	68	96
1917	71	75	77	91	90	92	94	92	88	81	74	68	94
1918	58	77	84	82	91	94	91	95	87	86	72	75	95
1919	66	62	75	86	84	92	95	90	93	90	77	71	95
1920	68	58	77	85	85	92	94	87	86	83	76	62	94
1921	69	72	89	85	87	93	93	96	92	85	76	68	96
1922	65	74	79	89	87	91	91	91	90	83	75	72	91
1923	69	78	80	80	84	93	92	93	90	83	70	73	93
1924	59	64	74	84	86	95	91	96	94	83	77	79	96
1925	—	71	83	94	93	96	100	103	103	82	71	60	103
1926	67	71	—	—	95	96	105	93	91	86	70	—	105
1927	—	76	80	90	94	94	94	92	94	86	77	73	—
1928	74	66	81	81	90	92	93	91	88	86	74	61	93
1929	70	65	89	90	85	90	91	91	88	78	77	—	—
1930	—	—	—	—	90	99	101	100	95	82	75	63	91
1931	69	66	67	83	91	98	96	95	94	86	79	—	98
1932	—	80	78	—	—	—	—	—	95	79	78	68	—
1933	75	—	—	81	93	98	93	93	91	86	73	71	98
1934	70	69	78	85	90	95	97	94	88	80	79	65	97
1935	67	69	86	81	87	93	92	97	89	83	83	63	97
1936	66	76	—	87	91	102	99	94	90	78	73	64	102
1937	72	70	72	89	93	92	96	92	89	85	73	68	96
1938	67	74	80	—	—	—	—	—	92	88	79	69	—
1939	70	74	83	85	93	97	98	93	97	90	74	72	98
1940	58	65	—	82	96	98	98	92	92	84	77	65	98

Highest Temperature - Marion, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1941	---	---	72	89	97	94	97	94	94	93	79	70	97
1942	71	65	78	90	90	96	98	96	93	83	80	63	98
1943	78	77	78	89	90	98	96	100	95	86	75	75	100
1944	78	78	78	---	92	100	97	94	97	85	72	68	100
1945	60	70	90	86	89	98	97	92	90	82	79	61	98

Summary of Period 1921-45

Max.	78	80	90	94	97	102	105	103	103	93	83	79	105
Min.	58	64	67	80	84	90	91	91	88	78	70	60	91
Mean	69	71	80	86	91	96	96	94	92	84	76	68	97

Summary of Record

Max.	81	80	95	94	98	102	105	103	103	93	83	80	105
Min.	58	58	67	80	84	88	89	87	85	78	69	58	91
Mean	69	70	79	86	91	94	96	94	92	85	76	68	97

Lowest Temperature - Marion, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1891	18	16	---	---	---	---	---	---	---	---	---	---	---
1892	---	14	15	25	36	55	52	57	---	27	15	12	---
1893	-10	20	11	25	---	53	---	50	46	23	15	17	-10
1894	19	16	16	27	35	45	---	---	---	---	18	-5	-5
1895	-4	0	22	25	---	---	---	---	---	---	---	---	---
1896	9	10	25	30	52	52	54	52	39	28	26	15	9
1897	1	17	23	30	37	50	54	54	40	35	20	19	1
1898	12	9	24	28	34	52	55	60	46	28	20	8	8
1899	14	-6	9	28	42	51	51	59	36	30	24	5	-6
1900	4	1	17	25	39	55	53	60	48	38	24	22	1
1901	15	12	8	30	41	49	61	57	---	34	18	4	---
1902	12	9	18	23	42	47	54	53	39	31	26	13	9
1903	10	7	21	28	40	44	52	60	41	29	15	10	7
1904	6	8	22	25	33	48	53	---	---	---	23	16	6
1905	7	0	28	27	45	47	---	---	---	31	19	15	0
1906	18	9	14	28	30	52	---	---	---	25	19	14	9
1907	17	16	27	23	39	49	59	50	44	30	23	19	16
1908	13	1	24	26	38	49	55	55	39	33	24	16	1
1909	9	10	21	26	30	53	51	49	39	25	21	5	5
1910	12	5	20	30	32	44	53	55	44	20	21	12	5
1911	15	15	20	26	35	49	49	55	55	34	19	18	15
1912	5	8	22	31	39	44	56	51	48	34	16	16	5
1913	21	15	20	34	37	44	53	59	36	28	16	20	15
1914	16	12	14	31	38	51	52	58	42	24	11	6	6
1915	15	18	21	26	46	50	53	53	40	30	23	15	15
1916	11	13	18	30	42	49	62	59	39	32	19	3	3
1917	11	3	17	30	35	43	54	51	41	24	18	-6	-6
1918	-8	13	24	29	34	50	51	53	36	34	26	18	-8
1919	4	15	28	29	45	55	49	52	42	43	24	14	4
1920	1	10	8	25	39	50	56	60	49	26	19	19	1

Lowest Temperature - Marion, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1921	20	24	32	29	36	54	59	55	52	30	24	24	20
1922	15	16	24	31	39	52	60	44	49	34	16	23	15
1923	22	12	16	17	31	50	49	53	49	38	25	17	12
1924	0	10	21	24	40	50	57	55	43	29	18	12	0
1925	---	17	12	30	33	55	50	49	57	28	25	2	---
1926	13	---	---	---	44	43	50	59	53	30	20	15	---
1927	6	24	20	30	38	50	55	49	39	32	23	13	6
1928	-1	15	18	26	37	50	54	54	38	30	18	15	-1
1929	9	15	17	32	38	46	50	50	39	31	5	---	---
1930	---	---	---	---	40	41	54	45	42	25	12	10	---
1931	15	19	23	33	38	44	61	49	51	30	23	---	---
1932	---	23	10	---	---	---	---	---	42	34	14	19	---
1933	11	---	---	32	45	41	47	57	46	29	16	18	---
1934	2	9	15	31	43	55	64	56	48	27	23	12	2
1935	12	11	22	30	39	47	61	52	44	27	19	12	11
1936	8	7	---	25	42	48	56	53	42	31	13	22	---
1937	30	18	16	28	40	56	52	60	47	27	13	8	8
1938	7	20	22	---	---	---	---	---	41	33	12	16	---
1939	15	12	20	29	35	58	55	57	47	26	23	17	12
1940	-5	17	15	25	33	45	51	53	30	33	18	10	-5
1941	---	---	17	34	34	46	56	53	42	29	19	19	---
1942	3	13	20	27	42	49	57	48	31	27	16	9	3
1943	12	2	5	23	32	60	54	54	38	24	20	8	2
1944	13	8	17	---	38	52	46	52	45	32	21	13	---
1945	14	13	28	25	34	46	58	50	50	32	16	4	4

Summary of Period 1921-45

Max.	30	24	32	34	45	60	64	60	57	38	25	24	20
Min.	-5	2	5	17	31	41	46	44	30	24	5	2	-5
Mean	11	15	19	28	38	49	55	52	44	30	18	14	6

Summary of Record

Max.	30	24	32	34	52	60	64	60	57	43	26	24	20
Min.	-10	-6	5	17	30	41	46	44	30	20	5	-6	-10
Mean	10	12	19	28	38	48	54	54	43	30	19	13	5

Precipitation in Morganton, Burke County, North Carolina:
Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1889	3.40	4.40	1.60	2.17	6.17	4.29	6.97	4.00	4.89	0.50	6.95	0.45	45.79
1890	2.10	6.43	4.00	2.00	4.80	3.85	6.55	4.76	5.02	4.96	0.40	1.88	46.75
1891	6.28	6.63	8.59	2.42	4.59	2.41	4.61	6.04	3.52	0.56	4.75	3.93	54.33
1892	6.71	2.84	3.45	4.05	4.22	8.63	5.12	2.02	7.52	0.20	3.77	2.00	50.53
1893	2.90	6.80	1.16	3.70	4.95	7.14	2.00	9.37	7.75	10.70	3.10	1.60	61.17
1894	3.71	5.00	0.85	2.15	3.10	2.07	3.08	2.13	4.78	5.65	0.55	4.75	37.82
1895	3.64	2.20	2.43	5.49	3.72	2.54	2.42	3.99	2.68	0.70	1.24	3.32	34.37
1896	3.35	4.64	3.93	1.58	2.72	4.13	9.47	1.08	7.44	0.76	6.47	2.23	47.80
1897	3.40	7.27	6.29	4.99	1.97	4.50	3.70	1.16	1.60	6.70	2.13	3.49	47.20
1898	3.25	0.67	2.97	2.32	3.45	3.51	6.68	7.30	6.41	8.47	3.00	4.65	52.68
1899	3.84	9.35	10.82	4.60	2.33	4.78	4.23	4.14	2.17	1.45	0.80	3.60	52.41
1900	2.80	8.10	5.70	6.10	2.20	5.97	2.65	1.15	2.10	3.20	2.26	4.40	46.63
1901	2.51	2.80	6.00	7.90	6.70	8.90	1.30	14.70	4.10	0.90	1.00	6.38	63.19
1902	1.96	6.65	5.10	2.12	0.62	5.18	2.88	1.10	3.31	5.86	3.83	4.26	42.87
1903	4.91	8.44	9.29	4.85	0.61	7.89	2.27	5.20	3.16	1.87	2.56	0.99	52.04
1904	1.59	3.73	4.15	0.98	4.37	4.39	4.88	7.03	3.91	0.92	3.51	2.85	42.31
1905	4.38	6.90	1.46	2.12	6.25	3.16	13.95	5.32	1.24	3.01	0.36	8.89	57.04
1906	7.22	0.73	6.00	1.30	2.02	10.52	4.77	9.74	3.86	5.99	1.72	3.99	57.86
1907	0.48	1.64	2.36	4.67	2.73	10.43	5.76	1.83	4.64	0.63	4.76	8.01	47.94
1908	3.50	6.95	3.56	2.88	4.57	6.15	9.55	11.48	3.01	9.32	1.16	4.31	66.44
1909	2.98	4.04	5.43	2.63	4.97	9.04	8.88	8.87	6.23	2.34	0.48	4.27	60.16
1910	3.22	4.49	1.20	1.66	4.68	7.32	1.93	6.19	2.47	3.94	0.21	3.70	41.01
1911	2.44	2.21	2.86	6.64	1.30	1.46	2.68	6.95	3.55	5.69	4.03	5.06	44.87
1912	1.81	4.95	8.62	4.34	9.45	3.40	6.32	3.34	5.80	2.16	2.89	2.70	55.78
1913	4.31	3.21	8.64	2.82	4.62	3.74	1.45	3.46	5.26	6.20	1.31	4.80	49.82
1914	2.27	3.87	2.18	5.24	0.91	2.23	5.24	3.07	2.59	6.32	4.85	9.00	47.77
1915	6.69	5.27	3.15	0.41	4.82	3.30	2.46	9.43	3.71	6.10	3.52	6.25	55.11
1916	2.56	4.50	1.68	1.52	4.26	7.11	15.48	3.78	2.91	3.36	1.23	2.75	51.14
1917	3.00	3.14	8.47	3.61	2.82	3.76	10.43	2.49	8.43	3.33	0.69	1.95	52.12
1918	6.61	1.99	1.82	5.66	3.41	3.64	5.35	4.37	4.04	13.06	2.41	7.18	59.54
1919	5.03	4.32	4.98	3.75	6.05	4.08	6.19	4.68	0.75	4.33	1.69	2.78	48.63
1920	3.16	5.20	6.00	6.32	2.06	9.97	6.61	11.43	3.93	0.19	5.62	6.49	66.98
1921	6.50	4.59	2.00	3.92	1.59	2.77	6.09	3.11	2.18	3.61	2.17	1.93	40.76
1922	3.89	5.28	5.69	4.10	5.72	4.40	6.15	4.08	0.46	4.18	0.20	4.55	48.70
1923	4.56	2.95	7.32	4.16	7.22	2.24	4.38	5.44	2.45	1.41	4.10	3.60	49.83
1924	5.65	3.19	3.10	6.44	4.24	5.62	7.48	3.88	9.82	2.03	0.80	6.12	58.37
1925	4.63	1.16	2.17	1.57	2.05	3.40	1.44	2.77	2.28	3.61	2.87	1.81	29.76
1926	6.18	3.82	3.20	2.24	2.40	0.80	6.13	3.61	1.08	2.11	3.63	4.71	39.91
1927	0.84	4.06	2.54	2.94	2.86	3.49	4.80	4.51	2.27	2.54	1.78	8.52	41.15
1928	1.95	3.35	4.52	4.62	6.10	3.93	3.39	10.94	8.38	3.18	0.68	1.15	52.19
1929	2.88	4.87	5.75	3.56	4.90	6.30	5.93	1.45	6.35	9.20	3.75	3.55	58.49
1930	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1931	2.21	1.64	5.48	5.17	6.21	1.51	5.85	5.03	0.67	1.96	0.73	10.28	46.74
1932	5.40	2.41	5.12	1.84	4.02	3.88	2.96	11.43	4.07	10.72	5.01	7.25	64.11
1933	2.11	3.12	3.03	3.82	5.01	1.14	4.80	5.76	4.55	2.03	0.73	2.95	39.05
1934	2.09	3.99	7.92	1.22	4.01	3.44	10.91	8.33	4.57	3.91	4.47	2.27	57.16
1935	5.88	2.83	8.22	5.23	3.07	1.19	6.56	3.80	3.55	2.54	3.69	2.95	49.51

Precipitation in Morganton, Burke County, North Carolina:
Monthly and annual (in inches and hundredths) Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1936	10.12	4.82	6.40	5.91	0.58	1.29	6.07	6.84	4.58	6.90	1.17	6.84	61.52
1937	10.25	2.93	1.55	5.96	2.28	4.12	6.48	5.31	1.98	9.72	2.67	2.62	56.20
1938	3.03	1.28	3.53	2.29	4.94	3.09	6.21	2.41	3.02	0.43	5.27	2.74	38.27
1939	4.90	9.61	2.56	4.31	4.03	3.53	3.82	3.76	0.32	1.72	1.30	3.12	42.98
1940	2.17	1.80	3.10	2.74	1.48	1.38	3.77	14.32	0.30	1.41	4.24	3.89	40.90
1941	2.24	1.40	3.33	3.70	1.46	3.31	12.38	2.61	0.53	1.20	1.39	5.03	38.58
1942	3.65	4.15	6.48	1.99	6.51	4.04	5.58	4.67	6.41	1.71	2.10	6.59	54.18
1943	5.71	2.03	4.45	4.49	2.91	4.04	11.45	5.28	2.55	1.21	3.60	3.05	50.77
1944	3.32	6.25	9.35	3.70	3.19	2.99	5.71	2.79	7.73	4.85	3.76	2.45	56.09
1945	1.16	4.88	2.11	4.06	3.18	2.33	5.51	4.22	14.76	2.64	3.40	6.41	55.26
Summary of Period 1921-45													
Max.	10.25	9.61	9.35	6.44	7.22	6.30	12.38	14.32	14.76	10.72	5.27	10.28	64.11
Min.	0.84	1.16	1.55	1.22	0.58	0.80	1.44	1.45	0.30	0.43	0.20	1.15	29.76
Mean	4.25	3.61	4.55	3.75	3.75	3.11	6.00	5.27	3.95	3.53	2.66	4.35	48.77
Summary of Record													
Max.	10.25	9.61	10.82	7.90	9.45	10.52	15.48	14.70	14.76	13.06	6.95	10.28	66.98
Min.	0.48	0.67	0.85	0.41	0.58	0.80	1.30	1.08	0.30	0.19	0.20	0.45	29.76
Mean	3.89	4.22	4.54	3.62	3.78	4.36	5.71	5.32	4.07	3.82	2.63	4.24	50.19

Average Temperature - Morganton, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1891	39.8	45.2	42.8	59.0	64.2	74.5	74.4	75.8	70.2	55.1	45.8	45.2	57.7
1892	36.5	44.0	47.8	55.8	67.2	76.2	76.4	77.0	70.8	57.6	47.8	-----	-----
1893	29.2	43.6	48.4	60.4	64.0	71.4	77.4	73.5	69.2	59.0	46.6	43.7	57.2
1894	43.3	42.8	53.2	55.2	65.2	71.8	74.7	73.6	70.8	58.6	47.2	42.2	58.2
1895	36.2	32.6	49.0	58.0	65.6	75.9	77.2	75.4	75.0	57.3	51.4	40.2	57.8
1896	37.8	43.4	47.7	64.6	74.4	74.2	75.7	79.0	70.4	58.2	52.1	39.2	79.0
1897	35.6	41.4	50.0	54.7	64.6	-----	77.6	74.8	70.6	62.2	49.1	41.3	-----
1898	39.7	39.8	52.0	53.9	67.6	74.2	77.7	77.2	73.2	59.4	-----	42.5	-----
1899	42.4	-----	51.2	56.9	69.6	75.8	76.2	78.2	71.6	61.8	53.7	45.9	-----
1900	-----	-----	-----	-----	-----	73.8	79.0	80.0	74.0	62.1	50.9	41.4	-----
1901	40.4	38.6	49.0	52.6	65.4	73.6	78.2	75.0	67.4	57.3	43.4	37.0	56.5
1902	37.6	35.4	-----	56.0	70.2	73.4	76.3	75.9	68.1	59.3	53.6	40.6	-----
1903	38.8	44.3	54.2	56.8	67.1	69.6	76.3	75.9	67.6	58.0	45.4	35.4	57.4
1904	34.9	38.6	49.6	52.8	64.4	72.2	73.2	74.0	69.5	56.3	46.2	39.6	55.9
1905	34.4	32.4	52.6	58.2	68.2	74.5	75.5	72.9	71.2	57.8	48.4	38.8	57.1
1906	44.5	40.8	44.0	59.5	65.0	73.6	74.5	76.6	71.6	56.2	49.4	41.7	58.1
1907	47.0	39.0	55.4	50.8	63.4	68.8	76.4	74.0	70.1	54.6	46.0	39.6	37.1
1908	36.2	35.2	54.5	60.8	66.0	71.1	74.7	72.8	66.2	56.4	52.0	43.0	57.4
1909	44.4	47.6	49.5	60.2	65.0	75.2	74.4	74.2	67.0	56.1	53.8	36.8	58.7
1910	39.0	38.9	56.0	59.2	63.3	70.0	76.6	74.2	71.0	61.7	44.8	35.4	57.5
1911	43.6	47.8	49.3	54.6	68.0	77.0	76.2	76.6	74.2	61.4	44.5	43.3	61.6
1912	34.2	38.2	47.6	60.4	66.6	71.2	75.0	74.2	72.6	60.0	47.7	42.8	57.5
1913	46.2	43.0	51.8	57.0	67.2	72.4	79.1	75.8	66.2	58.6	48.8	43.4	59.1
1914	41.8	38.4	45.4	58.4	67.3	77.8	75.8	76.0	67.1	60.4	47.4	38.0	57.8
1915	38.8	43.1	41.6	58.7	67.2	70.6	75.8	73.5	70.2	60.8	50.4	38.4	57.4
1916	45.1	43.2	49.2	56.8	69.0	71.0	75.0	76.2	67.2	57.8	49.2	39.8	58.3
1917	44.4	42.0	48.8	61.1	61.5	71.9	76.0	73.9	67.0	53.6	47.0	31.8	56.6
1918	30.8	46.8	56.2	55.8	69.2	73.2	73.0	76.0	64.6	62.4	46.6	46.4	58.6
1919	42.6	41.0	51.0	58.2	66.3	73.7	76.4	75.1	69.8	68.0	50.8	39.2	59.3
1920	39.0	38.1	46.4	56.5	62.4	-----	75.0	73.6	70.6	59.6	47.0	40.9	-----

Average Temperature - Morganton, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1921	40.6	43.8	58.0	59.6	64.2	75.3	76.2	73.3	75.6	58.2	51.9	—	—
1922	—	48.2	51.0	60.4	66.3	74.4	76.4	72.8	71.0	59.0	49.2	45.4	—
1923	42.6	41.3	50.8	56.7	63.7	74.1	75.1	75.8	71.0	58.2	47.2	48.2	53.8
1924	36.8	39.6	46.2	57.4	62.4	75.0	73.6	76.1	65.6	57.8	50.0	41.4	56.8
1925	40.4	48.2	52.2	61.8	62.8	76.9	79.4	75.3	76.4	57.8	46.4	40.5	59.8
1926	38.7	45.4	44.5	57.2	67.5	73.1	77.8	77.8	73.9	60.6	44.2	42.7	58.6
1927	42.2	50.5	51.8	59.6	68.2	71.8	76.6	73.6	72.7	63.0	53.4	41.5	60.4
1928	41.4	42.6	51.0	56.0	64.4	72.7	77.8	77.4	67.6	61.8	49.0	41.0	58.6
1929	42.1	40.9	53.0	62.0	66.4	72.4	75.3	73.8	69.1	56.4	50.6	41.6	58.6
1930	—	—	—	—	—	—	—	—	—	—	—	—	—
1931	43.5	45.3	45.7	57.0	64.2	75.4	79.0	75.2	74.0	60.7	54.6	48.2	60.2
1932	48.4	49.2	46.8	57.9	64.8	74.8	79.4	75.4	68.8	58.6	46.1	42.4	59.4
1933	46.8	42.2	49.0	56.4	69.4	75.2	76.2	75.0	73.8	58.4	49.2	48.4	60.0
1934	43.6	37.0	45.4	58.8	65.6	76.0	79.7	76.8	72.0	59.9	50.8	41.2	58.9
1935	41.4	43.6	55.4	58.6	65.3	74.1	77.8	76.7	71.2	60.2	52.8	35.2	59.4
1936	36.1	39.4	50.4	54.4	67.2	74.2	77.2	75.9	71.1	61.6	48.2	41.4	53.1
1937	49.0	40.6	46.3	54.9	65.8	76.9	78.0	77.4	67.8	55.5	46.2	40.8	53.3
1938	41.0	48.1	56.0	58.4	67.2	71.4	75.2	77.8	71.6	59.2	51.8	40.8	59.9
1939	43.4	47.4	53.4	57.6	67.0	77.6	76.8	76.0	73.0	63.4	46.6	43.7	60.5
1940	30.5	42.1	46.2	56.8	65.4	75.1	74.6	74.7	66.6	59.6	49.0	41.6	57.1
1941	41.0	37.6	43.8	58.8	67.8	73.1	76.5	76.6	71.9	65.2	48.7	43.6	58.7
1942	38.7	36.7	48.4	59.2	65.2	74.0	78.0	74.6	70.9	59.9	51.0	41.3	58.2
1943	43.8	44.6	47.2	56.5	68.6	78.6	76.0	77.7	66.4	59.0	47.2	42.4	59.0
1944	41.7	46.0	48.6	56.6	69.3	76.6	75.6	75.2	71.4	59.3	46.6	37.4	58.7
1945	41.4	44.4	59.8	61.4	64.2	75.4	77.0	75.6	73.6	58.4	51.6	37.3	60.0

Summary of Period 1921-45

Max.	49.0	50.5	59.8	62.0	69.4	78.6	79.7	77.8	76.4	65.2	54.6	48.4	60.5
Min.	30.5	36.7	43.8	54.4	62.4	71.4	73.6	72.8	65.6	55.5	44.2	35.2	56.8
Mean	41.5	43.5	58.1	58.1	66.0	74.8	76.9	75.7	71.1	59.7	49.3	42.2	59.0

Summary of Record

Max.	49.0	50.5	59.8	64.6	74.4	78.6	79.7	80.0	76.4	68.0	54.6	48.4	72.0
Min.	29.2	32.4	41.6	50.8	61.5	68.8	73.0	72.8	64.6	53.6	43.4	31.8	55.9
Mean	40.4	42.1	49.9	57.7	66.2	73.9	76.4	75.5	70.4	59.2	48.9	41.2	58.9

Highest Temperature - Morganton, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1891	70	75	67	86	88	95	88	97	87	80	75	67	97
1892	67	70	75	77	88	90	94	90	83	80	80	—	94
1893	58	72	78	90	88	89	94	93	91	87	69	70	94
1894	66	68	87	86	88	94	94	93	91	82	75	70	94
1895	62	67	80	82	93	96	95	92	96	80	75	66	96
1896	64	70	72	91	93	89	90	95	97	78	70	65	97
1897	62	70	72	78	87	—	97	96	100	91	74	65	100
1898	74	74	86	84	83	94	96	92	92	84	—	72	96
1899	68	—	80	88	96	97	98	99	97	87	78	70	99
1900	—	—	—	—	—	92	98	100	98	86	79	61	100
1901	63	68	73	84	89	97	98	92	87	83	72	68	98
1902	66	65	—	86	93	98	98	97	92	81	77	67	—

Highest Temperature - Morganton, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1903	63	69	74	86	97	89	95	96	90	85	77	57	97
1904	63	71	80	82	91	94	96	93	91	86	71	64	96
1905	67	59	76	85	92	95	93	94	91	86	75	62	95
1906	68	69	72	88	92	95	94	93	89	77	77	68	95
1907	76	65	92	82	88	88	96	94	92	82	74	66	96
1908	63	64	82	84	89	93	93	94	88	85	75	76	94
1909	76	73	71	87	87	92	93	95	87	83	77	69	95
1910	75	66	87	89	90	89	92	89	92	90	68	62	92
1911	74	77	82	83	95	102	98	97	92	92	71	67	102
1912	62	63	84	80	91	94	92	96	95	89	80	73	96
1913	73	72	73	84	91	94	104	94	88	84	76	70	104
1914	67	65	78	88	96	99	98	94	93	83	77	61	99
1915	63	65	66	90	89	89	99	94	91	82	79	63	99
1916	69	69	79	86	94	90	90	92	93	86	78	68	94
1917	71	78	76	89	90	94	93	94	89	82	74	66	94
1918	57	78	82	82	93	95	92	97	88	86	72	72	97
1919	67	62	74	86	86	93	96	93	93	90	79	64	96
1920	---	54	75	82	82	---	93	89	85	83	78	64	---
1921	69	71	86	85	88	97	93	95	94	84	75	---	---
1922	---	78	79	87	87	92	92	92	92	88	75	72	---
1923	64	74	79	86	83	92	93	94	91	84	69	72	94
1924	66	63	75	85	87	97	94	94	95	82	77	76	97
1925	65	70	83	94	93	96	98	101	103	82	72	66	103
1926	66	71	78	85	95	96	105	93	92	88	72	69	105
1927	77	77	82	91	94	97	97	94	100	90	82	79	100
1928	72	68	82	79	90	95	95	96	90	86	73	65	96
1929	74	62	88	90	88	93	92	92	90	75	74	69	93
1930	---	---	---	---	---	---	---	---	---	---	---	---	---
1931	75	73	68	83	89	98	98	95	96	89	81	76	98
1932	77	79	76	86	89	93	102	98	95	79	76	69	102
1933	71	79	78	82	92	99	97	92	93	90	78	74	99
1934	72	70	78	88	91	97	99	94	90	82	80	66	99
1935	70	72	87	84	88	95	95	100	93	88	82	65	100
1936	61	77	77	88	93	105	104	96	92	82	75	61	105
1937	75	67	70	85	94	95	98	93	91	86	76	69	98
1938	66	75	83	85	91	88	91	96	93	89	80	70	96
1939	71	75	82	84	94	95	96	97	99	93	79	74	99
1940	59	68	77	85	96	97	100	92	94	87	80	68	100
1941	70	61	71	88	98	94	96	95	98	94	79	71	98
1942	71	64	77	89	88	95	99	97	92	85	79	65	99
1943	77	77	78	85	90	98	96	99	93	89	82	75	99
1944	78	77	81	86	91	100	97	94	95	87	75	69	100
1945	60	72	91	88	89	101	97	93	94	82	82	63	101
Summary of Period 1921-45													
Max.	78	79	91	94	98	105	105	101	103	94	82	79	105
Min.	59	61	68	79	83	92	91	92	90	75	69	61	93
Mean	70	72	79	86	91	96	97	95	94	86	77	70	99
Summary of Record													
Max.	78	79	92	94	98	105	105	101	103	94	82	79	105
Min.	57	54	66	77	82	88	88	89	83	75	68	57	92
Mean	68	70	78	86	91	95	96	95	92	85	76	68	98

Lowest Temperature - Morganton, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1891	16	17	22	29	37	58	61	57	49	28	12	17	12
1892	12	21	24	31	51	62	57	63	44	29	14	—	—
1893	-1	19	20	30	43	55	62	52	47	27	16	17	-1
1894	19	16	16	30	38	44	50	59	50	29	20	8	8
1895	0	1	26	33	45	61	58	57	49	32	25	18	0
1896	8	8	24	35	57	61	60	59	45	31	30	18	8
1897	5	16	22	30	38	--	62	53	40	33	21	20	5
1898	12	9	23	27	48	56	55	65	54	30	--	7	7
1899	15	--	11	27	41	50	50	59	39	32	21	4	4
1900	--	--	--	--	--	55	53	61	45	34	24	19	--
1901	17	12	15	32	44	49	61	50	40	30	16	-4	-4
1902	10	12	--	29	41	47	55	53	37	30	26	13	--
1903	17	10	23	26	41	45	51	61	39	25	12	11	10
1904	4	5	22	23	37	46	53	49	41	24	19	14	4
1905	6	2	29	29	42	46	61	48	50	28	17	11	2
1906	11	9	17	27	34	52	58	64	50	24	16	12	9
1907	15	15	26	22	36	47	58	49	43	26	20	14	14
1908	12	1	25	28	38	46	54	50	36	30	20	15	1
1909	9	10	24	27	33	57	51	50	36	26	22	9	9
1910	12	13	26	33	34	45	53	58	43	21	20	11	11
1911	15	18	20	29	35	50	50	54	58	32	18	17	15
1912	2	8	21	28	41	44	56	53	45	33	17	16	2
1913	20	17	23	34	38	45	53	56	38	30	20	15	15
1914	15	14	17	31	39	52	53	57	39	24	15	7	7
1915	18	15	21	25	45	49	53	54	38	29	23	18	15
1916	8	12	18	28	41	49	62	59	40	31	19	4	4
1917	12	4	17	28	34	42	56	50	40	25	17	-10	-10
1918	0	16	25	27	33	50	51	51	36	36	26	19	0
1919	8	16	26	26	46	53	50	51	42	48	23	16	8
1920	3	10	10	29	39	52	56	62	50	26	17	18	--
1921	18	22	27	27	35	52	61	55	52	28	24	23	18
1922	16	16	28	31	37	52	61	49	47	33	17	22	16
1923	25	11	18	20	36	48	57	54	50	34	23	19	11
1924	3	16	24	25	40	50	57	57	43	28	20	12	3
1925	18	18	13	29	36	57	54	52	57	28	19	5	5
1926	12	17	15	29	39	48	50	61	54	29	18	16	12
1927	4	25	17	30	42	50	56	50	40	35	23	14	4
1928	3	17	25	26	41	48	57	55	40	34	21	16	3
1929	14	18	18	35	42	50	52	51	42	32	12	10	10
1930	--	--	--	--	--	--	--	--	--	--	--	--	--
1931	13	18	23	36	41	46	63	54	38	29	22	19	13
1932	22	20	14	31	38	51	58	54	41	32	13	17	13
1933	16	8	19	31	43	40	46	55	43	29	15	19	8
1934	5	7	16	29	43	51	57	59	49	27	20	14	5
1935	14	13	18	33	37	50	62	51	41	25	16	4	4
1936	5	10	28	26	41	44	52	53	42	29	16	22	5
1937	30	18	16	28	42	56	62	60	46	28	11	9	9
1938	14	20	24	28	44	52	54	57	42	30	15	18	14
1939	15	21	24	29	33	59	56	56	48	26	23	18	15
1940	-3	8	13	25	32	48	53	52	33	34	21	13	-3

Lowest Temperature - Morganton, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1941	11	13	19	34	33	46	58	54	43	30	18	16	11
1942	-4	8	18	23	39	48	58	49	36	29	19	11	-4
1943	13	11	10	23	31	63	55	51	39	28	20	5	5
1944	16	8	20	26	39	50	54	54	47	31	26	12	8
1945	16	14	30	23	37	47	60	50	50	31	24	15	14
Summary of Period 1921-45													
Max.	30	25	30	36	44	63	63	61	57	35	26	23	18
Min.	-4	7	10	20	31	40	46	49	33	25	11	4	-4
Mean	12	15	20	28	38	50	56	54	44	30	19	15	8
Summary of Record													
Max.	30	25	30	36	57	63	63	65	58	48	30	23	18
Min.	-4	1	10	20	31	40	46	48	33	21	11	-10	-10
Mean	11	13	21	28	39	50	56	55	44	30	19	13	7

Precipitation in Tryon, Polk County, North Carolina:
Monthly and annual (in inches and hundredths)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1912	2.70	5.20	9.10	5.92	8.41	5.97	11.54	3.39	8.95	2.14	4.49	3.17	-----
1913	6.48	5.37	8.02	3.30	3.88	1.90	5.99	2.70	5.29	2.20	1.62	4.10	50.85
1914	1.50	2.14	2.70	6.02	.90	2.13	2.44	6.48	.95	7.59	6.32	11.65	50.82
1915	9.98	7.75	3.71	.73	5.24	6.70	4.13	6.35	4.34	6.01	4.26	4.38	63.58
1916	3.92	6.97	1.60	2.40	8.26	3.30	24.65	4.85	3.88	2.89	1.46	3.96	68.14
1917	4.36	5.62	10.29	3.55	2.63	2.22	6.57	5.52	9.14	2.80	.88	1.93	55.51
1918	8.16	2.30	1.78	6.66	2.85	8.59	5.75	2.94	4.21	15.74	3.95	9.90	72.83
1919	6.75	7.04	6.09	3.25	5.69	7.62	10.95	5.59	.81	3.78	4.49	5.67	67.73
1920	5.63	4.16	8.38	10.11	3.71	7.74	5.67	9.25	6.38	.77	4.70	6.99	73.49
1921	3.60	6.29	2.40	2.95	6.27	3.36	4.00	3.23	3.74	2.58	1.30	2.30	42.02
1922	4.90	7.00	7.10	3.32	9.43	5.00	5.69	3.00	.96	3.09	.43	6.01	55.93
1923	2.61	3.69	7.96	3.89	12.35	2.31	1.15	3.08	4.08	.93	3.64	4.77	50.46
1924	6.58	3.32	3.88	8.16	2.57	3.11	7.55	.93	11.50	1.30	.80	4.40	54.10
1925	6.50	1.10	2.44	2.51	4.17	1.08	1.00	1.58	1.67	4.08	5.75	2.26	34.14
1926	7.79	5.11	4.33	2.57	1.01	2.72	8.68	5.25	4.15	2.88	5.21	5.28	54.98
1927	1.47	5.39	3.44	3.42	2.66	5.06	3.23	3.38	1.22	2.79	2.35	10.17	44.58
1928	2.16	4.01	6.21	5.70	6.07	9.90	6.56	19.20	7.46	3.45	1.43	1.82	74.27
1929	4.13	9.78	9.70	5.42	7.65	2.50	6.33	2.18	13.62	8.79	5.47	3.23	78.80
1930	3.32	.80	1.70	2.61	2.42	2.96	1.50	2.77	2.56	1.29	6.86	5.68	34.47
1931	2.61	3.61	5.21	5.22	3.75	3.46	3.74	4.74	0.89	1.27	1.41	15.19	51.10
1932	7.58	3.13	5.90	3.15	5.08	6.01	5.12	7.02	4.17	13.35	6.88	10.88	78.27
1933	2.60	4.93	3.48	5.16	6.20	1.72	3.31	5.45	2.46	2.29	1.41	4.24	43.25
1934	2.98	4.51	9.66	4.02	5.77	6.70	4.29	11.64	3.75	6.11	4.74	3.66	67.83
1935	7.13	3.47	4.39	4.39	4.10	2.78	8.99	10.46	2.55	1.20	5.45	2.98	57.89
1936	11.53	5.64	6.29	9.44	0.95	2.06	4.01	4.79	7.52	14.25	2.71	9.12	78.31
1937	11.82	4.54	1.89	5.97	2.88	3.23	10.95	8.08	4.93	11.05	2.31	2.70	70.35
1938	3.17	2.36	5.16	2.70	6.27	5.32	10.24	3.76	3.65	0.85	3.64	3.42	50.84
1939	5.37	11.52	3.55	4.62	4.35	4.16	6.60	11.64	2.02	1.18	1.12	3.48	59.61
1940	3.67	5.21	4.95	2.74	1.84	5.23	4.25	14.64	0.99	2.29	5.53	4.61	55.95

Precipitation in Tryon, Polk County, North Carolina:
Monthly and annual (in inches and hundredths) Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1941	2.48	1.54	5.49	2.85	1.52	3.91	6.48	5.78	1.09	1.53	3.50	6.28	42.55
1942	4.21	6.60	6.52	0.99	10.13	3.43	5.93	10.32	9.33	2.64	2.41	9.31	71.82
1943	6.18	2.84	7.44	4.96	5.60	9.00	11.54	3.12	4.16	0.84	2.75	4.58	63.01
1944	4.39	8.30	11.02	6.08	0.77	3.23	4.23	4.33	10.02	3.56	5.33	3.81	65.57
1945	2.08	6.76	4.88	5.63	2.33	1.66	9.72	2.26	11.12	2.88	4.06	9.45	62.83

Summary of Period 1921-45

Max.	11.82	11.52	11.02	9.44	12.35	9.90	11.54	19.20	13.62	14.25	6.88	15.19	78.80
Min.	1.47	.80	1.70	.99	.77	1.08	1.00	.93	.89	.84	.43	1.82	34.14
Mean	4.85	4.86	5.41	4.34	4.65	4.00	5.80	6.11	4.78	3.86	3.46	5.59	57.72

Summary of Record

Max.	11.82	11.52	11.02	10.11	12.35	9.90	24.65	19.20	13.62	15.74	6.88	15.19	78.80
Min.	1.47	.80	1.60	.73	.77	1.08	1.00	.93	.81	.77	.43	1.82	34.14
Mean	5.02	4.94	5.50	4.42	4.64	4.30	6.55	5.87	4.81	4.13	3.49	5.63	58.97

Average Temperature - Tryon, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	----	----	----	62.6	68.8	72.8	76.3	76.4	74.4	63.6	52.5	46.2	----
1917	45.6	42.2	49.6	62.1	62.4	72.4	76.6	74.5	67.0	57.8	49.0	33.4	57.7
1918	32.5	48.0	55.6	56.6	69.0	73.8	73.3	76.4	64.5	61.9	48.6	46.2	55.9
1919	42.7	40.8	52.2	59.0	66.7	75.0	76.6	76.0	72.0	69.2	52.2	42.3	60.4
1920	41.1	----	48.5	56.6	63.8	73.4	76.4	74.8	72.8	61.9	50.4	43.6	----
1921	44.0	47.0	----	63.2	59.2	76.4	78.3	76.4	76.8	58.6	55.2	----	----
1922	----	46.3	----	65.8	64.9	74.2	77.2	76.8	74.3	61.2	50.2	47.6	----
1923	44.0	43.0	52.0	56.8	64.8	75.4	77.0	78.0	72.8	58.9	49.8	49.0	60.1
1924	38.0	40.4	47.3	57.8	63.6	76.5	76.2	79.4	----	----	----	----	----
1925	----	----	54.1	62.6	64.0	77.4	79.0	76.0	76.6	57.7	47.6	42.6	----
1926	42.0	46.6	44.3	57.9	67.2	73.4	77.4	77.0	73.8	61.4	46.2	44.8	59.3
1927	42.2	52.8	51.5	59.4	66.2	69.6	74.8	73.5	73.0	63.4	54.2	43.4	60.3
1928	42.4	43.9	51.0	55.8	63.8	70.8	76.0	75.6	67.6	63.0	51.9	43.0	58.7
1929	43.1	40.4	----	59.8	64.9	71.6	74.6	75.4	69.2	58.2	50.3	44.0	----
1930	43.4	----	----	59.9	68.2	71.8	79.9	74.6	73.1	56.2	47.4	38.0	----
1931	42.4	45.4	46.4	57.0	64.7	74.5	79.8	75.7	74.8	62.4	56.2	50.6	60.8
1932	49.8	51.8	48.1	59.1	65.7	74.4	80.0	76.1	70.3	60.2	48.3	44.8	60.7
1933	48.8	43.6	51.4	57.2	71.0	76.0	75.8	75.7	74.6	59.8	50.2	48.0	61.0
1934	44.4	38.0	47.6	59.0	66.6	74.9	79.5	76.4	71.9	60.2	51.2	41.1	59.2
1935	41.4	42.6	55.1	58.8	65.8	73.8	76.0	74.6	69.0	60.0	53.8	37.2	59.0
1936	37.8	41.1	53.0	57.0	69.1	74.5	78.4	75.6	71.2	61.2	49.4	44.8	59.4
1937	51.6	44.3	50.4	57.2	66.6	75.7	76.0	74.9	66.6	56.6	47.6	42.5	59.2
1938	41.5	49.7	57.0	58.8	67.8	71.4	74.8	76.8	70.0	59.9	53.6	43.8	60.4
1939	45.2	49.0	54.4	59.0	66.0	77.2	76.8	74.8	72.9	63.7	49.3	46.6	61.2
1940	32.4	43.6	48.6	57.4	66.0	74.6	75.7	75.3	68.2	61.0	50.4	46.4	58.3
1941	43.8	40.8	46.4	61.4	68.6	74.5	77.2	76.2	72.0	67.2	51.5	46.9	60.5
1942	42.0	41.0	51.4	62.3	68.1	76.1	78.6	74.2	69.8	61.6	52.1	42.6	60.0
1943	45.2	46.8	48.8	58.3	70.2	78.6	76.4	78.4	68.0	59.2	51.2	46.2	60.6
1944	43.2	48.2	51.1	58.7	70.4	77.2	74.3	74.1	71.0	60.4	50.1	38.3	59.8
1945	44.0	47.0	60.6	62.8	65.5	75.6	77.0	75.4	73.4	59.8	52.4	37.2	60.9

Average Temperature - Tryon, N. C.
Continued -

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Summary of Period 1921-45													
Max.	51.6	52.8	60.6	65.8	71.0	78.6	80.0	79.4	76.8	67.2	56.2	50.6	61.2
Min.	32.4	38.0	41.3	55.8	59.2	69.6	74.3	73.5	66.6	56.2	46.2	37.2	58.3
Mean	43.2	44.9	51.0	59.3	66.4	74.6	77.1	75.9	71.7	60.5	50.8	43.9	60.0
Summary of Record													
Max.	51.6	52.8	60.6	65.8	71.0	78.6	80.0	79.4	74.8	69.2	56.2	50.6	61.2
Min.	32.4	38.0	41.3	55.8	59.2	69.6	73.3	73.5	64.5	56.2	46.2	33.4	58.3
Mean	42.8	44.8	51.1	59.4	66.3	74.5	76.9	75.8	71.4	61.2	50.8	43.6	59.8

Highest Temperature, Tryon, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest
1912	---	---	---	82	91	91	92	94	96	87	80	74	---
1917	74	77	78	92	92	97	97	95	90	83	74	72	97
1918	64	79	86	89	97	99	94	99	90	87	73	73	99
1919	67	64	78	88	88	95	96	94	94	91	79	66	96
1920	67	62	79	87	88	95	95	92	92	86	79	65	95
1921	74	77	---	85	91	95	95	98	96	81	77	---	---
1922	---	75	---	---	83	94	95	93	97	89	82	72	---
1923	68	77	80	91	85	98	96	97	93	83	73	73	98
1924	69	71	78	88	89	100	94	---	---	---	---	---	---
1925	---	---	86	95	92	98	99	103	105	82	72	72	---
1926	69	74	81	85	98	97	103	94	93	88	68	72	103
1927	78	78	83	87	84	99	95	93	100	90	79	75	100
1928	78	70	85	81	89	93	94	93	93	90	78	68	94
1929	74	66	---	88	87	95	95	97	91	83	78	78	---
1930	79	---	---	93	91	98	105	102	99	85	79	66	105
1931	74	69	70	84	91	99	100	99	100	91	84	82	100
1932	80	78	81	88	91	95	100	99	96	84	77	70	100
1933	78	78	82	85	94	101	100	95	93	89	79	74	101
1934	74	69	80	87	91	97	99	95	90	83	80	72	99
1935	72	69	91	84	89	94	93	96	89	88	85	68	96
1936	67	79	80	92	95	101	101	94	88	79	75	69	101
1937	73	68	77	91	89	93	94	89	87	88	75	67	94
1938	71	78	83	88	90	87	93	93	87	85	81	70	93
1939	74	76	84	85	91	94	96	93	96	91	76	75	96
1940	60	69	78	86	96	96	97	92	92	88	80	70	97
1941	71	63	71	90	96	94	95	92	92	93	81	73	96
1942	71	65	81	91	90	94	98	95	90	81	81	66	98
1943	75	79	79	89	92	99	95	99	92	89	80	77	99
1944	83	79	84	84	93	99	99	92	93	85	75	67	99
1945	64	78	92	89	94	100	98	92	94	81	81	65	100
Summary of Period 1921-45 *													
Max.	83	79	92	95	98	101	105	103	105	93	85	82	105
Min.	60	63	70	81	83	87	93	89	87	79	68	65	93
Mean	73	73	81	88	91	96	97	95	94	86	78	71	98
Summary of Record													
Max.	83	79	92	95	98	101	105	103	105	93	85	78	105
Min.	60	62	70	81	83	87	92	89	87	79	68	65	93
Mean	72	73	81	88	91	96	97	95	93	86	78	71	98

Lowest Temperature - Tryon, N. C.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest
1912	---	---	---	37	46	55	64	58	57	40	26	24	---
1917	15	2	17	34	35	40	55	52	38	23	23	2	2
1918	-3	15	23	25	31	47	48	47	35	33	24	20	-3
1919	7	15	25	27	46	57	55	55	49	47	26	20	7
1920	9	---	10	22	39	51	51	61	48	30	19	20	---
1921	17	25	---	28	32	54	61	56	58	31	25	---	---
1922	---	21	---	---	37	50	60	51	48	35	20	25	---
1923	24	13	20	18	38	53	52	56	49	33	27	23	13
1924	2	18	24	28	40	49	56	---	---	---	---	---	---
1925	---	---	16	28	35	54	52	49	56	27	21	6	---
1926	19	18	16	29	36	42	50	60	53	29	18	14	14
1927	6	24	22	26	35	52	58	48	38	33	22	12	6
1928	0	16	20	28	37	44	55	57	39	31	20	17	0
1929	13	15	---	31	34	44	53	50	41	32	9	7	---
1930	17	---	---	25	45	38	55	46	49	26	16	10	---
1931	13	21	24	32	42	43	61	51	37	28	23	20	13
1932	22	22	15	32	39	49	53	53	42	33	15	15	15
1933	15	9	19	31	41	40	41	55	48	29	15	18	9
1934	6	13	16	26	41	54	63	57	47	28	24	17	6
1935	14	14	18	35	39	46	59	50	48	28	26	11	11
1936	9	13	30	29	44	44	57	56	45	32	16	22	9
1937	33	20	27	27	44	55	55	60	46	31	14	12	12
1938	13	21	30	30	50	52	54	58	42	35	18	23	13
1939	18	17	27	33	33	62	57	56	50	30	27	22	17
1940	3	18	25	29	36	51	55	57	40	35	22	19	3
1941	16	15	22	38	36	50	62	54	46	35	24	22	15
1942	4	21	27	31	44	57	60	50	35	30	22	17	4
1943	14	11	14	23	33	61	57	52	41	29	24	15	11
1944	16	16	16	27	37	54	50	54	40	33	28	13	13
1945	20	17	33	24	34	44	59	50	53	33	24	14	14
Summary of Period 1921-45													
Max.	33	25	33	38	50	62	63	60	58	35	28	25	17
Min.	0	9	14	18	32	38	44	46	35	26	9	6	0
Mean	14	17	22	29	39	50	56	54	45	31	21	16	10
Summary of Record													
Max.	33	25	33	38	50	62	64	61	58	47	28	25	17
Min.	-3	2	10	18	31	38	44	46	35	23	9	2	-3
Mean	13	17	21	29	39	50	56	54	45	32	21	16	9

QUALITY OF WATER

The importance of water is not always realized, particularly when it is of good quality and is available in adequate quantity. Water of good quality and in adequate supply is essential for industry, agriculture, public and domestic purposes, and to all forms of life. The individual and specific requirements for water for numerous uses are many-fold. Data on the chemical quality of water are of value in providing needed technical information for specific purposes. This is of particular importance since unsuitable water may cause losses due to corrosion, deterioration of equipment, scaling of equipment, loss of flow, boiler failure, loss of heat transfer, silting of reservoirs, staining and discoloration of material, wasting of soap, poor quality of processed foods, beverages, textiles, ice, bleaching, dying and tanning, loss of crops and good soil, deterioration of recreation facilities and property values, and destruction of fish and shellfish.

The Catawba and Broad River Basins have ample rainfall and in general relatively insoluble surface soils and rocks. Most of the surface waters are soft and low in mineral content and are attractive to industries for many purposes. However, as industrial development and population increase, the quality of the streams may become poorer since the streams are the receivers of the waste materials. The prosperity of a state is advanced through its water facilities and then checked if adequate planning is not maintained through the study of chemical quality of water to assure its most advantageous use through ever-changing industrial development, growth, modern conveniences, and manner of waste disposal.

For years the Water Resources and Engineering Division has realized the need of data on the chemical character of water for planned coordination in the most advantageous use of water for industry, public supply, agriculture, recreation and in the conservation of fish and wildlife. The study of the chemical character of waters in these basins was started in 1922. The analyses of the waters of these basins had been carried on spasmodically until 1943. At this time the Water Resources and Engineering Division of the Department of Conservation and Development entered into an agreement with the Quality of Water Branch of the U. S. Geological Survey whereby a laboratory was set up in Raleigh and a much more intensive survey of the waters was started. This laboratory is set up on a permanent basis and analyses can be made when needed. These analyses are published each year by the Water Resources and Engineering Division of the Department of Conservation and Development and the Quality of Water Branch of the U. S. Geological Survey.

MISCELLANEOUS ANALYSES IN CATAWBA AND BROAD RIVER BASINS
Parts per million

Source and Location	Date of Collection	Suspended Matter	Color	Silica SiO ₂	Iron Fe	Calcium Ca	Magnesium Mg	Sodium Na	Potassium K	Carbonate CO ₃	Bicarbonate HCO ₃	Sulfate SO ₄	Chloride Cl	Fluoride F	Nitrate NO ₃	Total Dissolved Solids	Total Hardness CaCO ₃	Authority
Brockett Creek at Forest City	6-30-44	6	2	11	.02	2.0	1.0	3.2	0	14	1.6	1.4	.1	-.8	30	9	U. S. G. S.	
Broad River at Boiling Springs	2-9-26	87	86	17	1.0	2.9	1.6	3.5	.6	0	17	3.5	2.0	1.3	49	14	U. S. G. S.	
Broad River near Boiling Springs	11-10-44	58	6	13	.07	2.2	1.1	4.6	0	19	1.7	1.5	.1	1.2	35	10	U. S. G. S.	
Broad River below Chimney Rock	11-29-26	4.5	7	16	.06	2.6	.8	2.8	.6	0	16	1.7	1.0	---	10	5.5	U. S. G. S.	
Broad River 1 mile below Chimney Rock	1-27-26	7.5	4	22	.17	2.1	1.6	2.6	.5	0	16	3.6	.8	---	42	12	U. S. G. S.	
Broad River near Chimney Rock	11-11-44	2	6	11	.01	2.2	.9	3.3	0	16	1.3	1.0	.1	.4	30	9	U. S. G. S.	
Buck Creek above Lake Tahoma 8 miles from Marion	7-24-27	6	5	11	.16	2.8	2.2	2.9	.9	0	12	2.6	6.0	---	.26	39	15	Randolph
Catawba River near Belmont	12-25-26	48	12	17	.4	7.9	.02	3.0	1.1	0	16	3.7	.0	.6	32	12	U. S. G. S.	
Catawba River near Hickory	7-24-27	19	7	3.0	.2	8.7	1.1	3.6	1.8	0	19	4.6	4.0	---	.4	48	15	Randolph
Catawba River 2 miles above Marion	11-8-25	4.7	7	15	.2	2.8	1.0	2.7	.8	0	15	4.6	1.1	---	.6	43	20	Randolph
Catawba River Rt. 10, 2 miles W of Marion	11-13-44	2	7	12	.03	2.4	1.0	3.7	0	0	17	1.9	.1	.2	.51	10	U. S. G. S.	
Catawba River near Marion	8-22-28	6.5	6	25	.5	5.2	1.1	4.4	1.0	0	21	5	1.2	---	.17	44	13	Bd. of Health
Catawba River above Old Fort	9-14-46	--	11	9.0	.01	3.5	1.2	4.6	4.4	0	20	2.6	2.6	0	.1	36	13	U. S. G. S.
First Broad River near Laramie	11-10-44	5	3	12	.01	2.4	1.2	9.6	1.2	0	30	3.4	.56	.1	.3	46	11	U. S. G. S.
First Broad River West of Shelby	11-29-23	20	18	15	.58	2.7	1.5	2.4	.7	0	17	2.5	1.6	---	.5	34	12	U. S. G. S.
Green River near Mill Springs	11-11-44	69	6	10	.01	1.9	1.0	3.8	0	16	1.3	1.2	.1	.5	28	9	U. S. G. S.	
Green River 1½ miles above Headwaters of Lake Summit	8-30-27	16	10	9.5	.16	1.6	1.2	1.5	.7	0	12	1.1	2.2	---	.2	30	9	Randolph
Henry Park Henry River nr. Henry River	2-11-26	6.4	9	8.6	.10	1.7	1.0	1.5	.6	0	8.5	2.7	1.2	---	.36	25	8	U. S. G. S.
Henry River, Morganton intake	9-18-26	3.0	8	10	.06	1.7	2.0	2.0	.2	0	9.8	2.0	.9	---	.10	26	8	U. S. G. S.
Johns River at Collettsville	12-12-45	--	4	10	.02	2.4	.8	2.7	0	0	15	1.6	1.0	0	.0	25	9	U. S. G. S.
Linnville River at Branch	11-38-25	1.5	7	8.5	.08	2.6	.6	1.8	.6	0	12	2.1	1.0	---	.30	27	10	U. S. G. S.
Linnville River at Branch	11-35-44	2	7	7.6	.01	1.8	.7	2.6	.6	0	12	1.1	1.2	1	.2	21	7	U. S. G. S.
Mill Creek West of Old Fort	8-22-28	6	13	28	.6	3.2	1.2	4.3	1.2	0	21	3.8	1.0	---	.3	60	13	Bd. of Health
Mill Creek at Old Fort	12-6-45	--	6	8.7	.02	5.4	1.4	2.2	0	0	17	3.6	.9	0	.0	34	14	U. S. G. S.
N. Pacolet River 3 miles W. of Tryon	4-20-29	15	5	19	.4	2.2	1.8	2.0	.6	0	11	2.1	5.0	---	.4	36	13	Randolph
Second Broad River at Cliffside	11-38-25	11	26	16	.41	5.6	1.5	7.8	1.1	0	16	12	4	---	.08	64	18	Bd. of Health
Second Broad River at Cliffside	11-11-44	8	6	16	.10	2.9	1.4	4.3	1.2	0	12	3.1	6.2	1	.46	67	16	U. S. G. S.
Second Broad River near Forest City	6-14-44	207	5	17	.04	3.7	1.6	4.6	4.6	0	32	1.9	1.5	1	.4	67	15	U. S. G. S.
Second Broad River near Forest City	6-23-44	109	5	16	.02	3.8	1.7	3.7	0	0	26	2.0	1.2	0	.2	44	16	U. S. G. S.
S. Fork Catawba River ½ mile E. of Lowell	11-29-26	13	22	16	.40	4.1	1.8	2.6	.9	0	22	3.0	2.1	---	1.0	50	18	U. S. G. S.
S. Fork Catawba River at Lowell	11-10-44	9	12	16	.14	3.6	1.9	6.2	0	0	26	3.9	.1	.8	.48	17	U. S. G. S.	
S. Fork Catawba River at Spangler Mountain	10-20-46	7	4	15	.03	4.0	1.5	6.6	6.6	0	23	2.9	5.5	.1	.6	45	16	U. S. G. S.

PUBLIC WATER SUPPLIES
Parts per million

Location	Date of Collection	Color	Silica SiO ₂	Iron Fe	Calcium Ca	Magnesium Mg	Sodium Na	Potassium K	Carbo-nate CO ₃	Bicar-bonate HCO ₃	Sul-phate SO ₄	Chlo-ride Cl	Fluo-ride F	Ni-trate NO ₃	Total Dis-solved Solids	Total Hard-ness CaCO ₃	Authority
Charlotte	4-5-22	--	8.4	.09	11	2.2	2.0	.8	0	16	23	1.6	--	.45	57	37	U. S. G. S.
Charlotte	5-17-51	--	14	.01	7.1	1.2	2.6	.9	0	25	7.0	2.0	--	.50	48	23	U. S. G. S.
Charlotte	6-26-44	2	10	.01	7.2	1.2	3.0	3.9	16	6.6	2.6	0	.4	44	23	U. S. G. S.	
Cherryville	9-29-45	0	41	.06	12	5.6	5.6	0	67	3.9	5.0	.2	1.7	109	53	U. S. G. S.	
Gastonia	4-28-44	1	14	.02	9.0	1.7	4.0	3.0	24	8.9	2.8	0	.5	67	29	U. S. G. S.	
Hickory	12-23-26	10	12	.2	5.0	1.1	2.8	.8	0	16	4.2	1.0	--	.2	41	14	U. S. G. S.
Huntersville	6-12-46	0	36	.12	16	5.8	6.7	0	70	3.9	4.5	.1	10	120	64	U. S. G. S.	
Lenoir	12-12-43	2	16	.03	6.4	1.5	4.4	0	28	6.5	1.6	0	.1	51	21	U. S. G. S.	
Lincolnton	10-3-46	2	28	.14	3.6	1.4	7.0	0	29	2.1	2.4	0	.7	62	16	U. S. G. S.	
Old Fort	12-6-46	4	6.8	.04	1.6	.8	1.9	0	10	2.6	.5	0	.0	22	7	U. S. G. S.	
Pineville	7-18-46	0	57	.55	61	26	16	0	179	83	20	.2	6.4	374	234	U. S. G. S.	
Stanley	9-27-46	0	36	.07	38	3.2	9.2	0	142	3.9	5.0	.0	.5	168	108	U. S. G. S.	

Ground Water in the Catawba and Broad River Basins, North Carolina

By M. J. Mundorff and H. E. LeGrand

INTRODUCTION

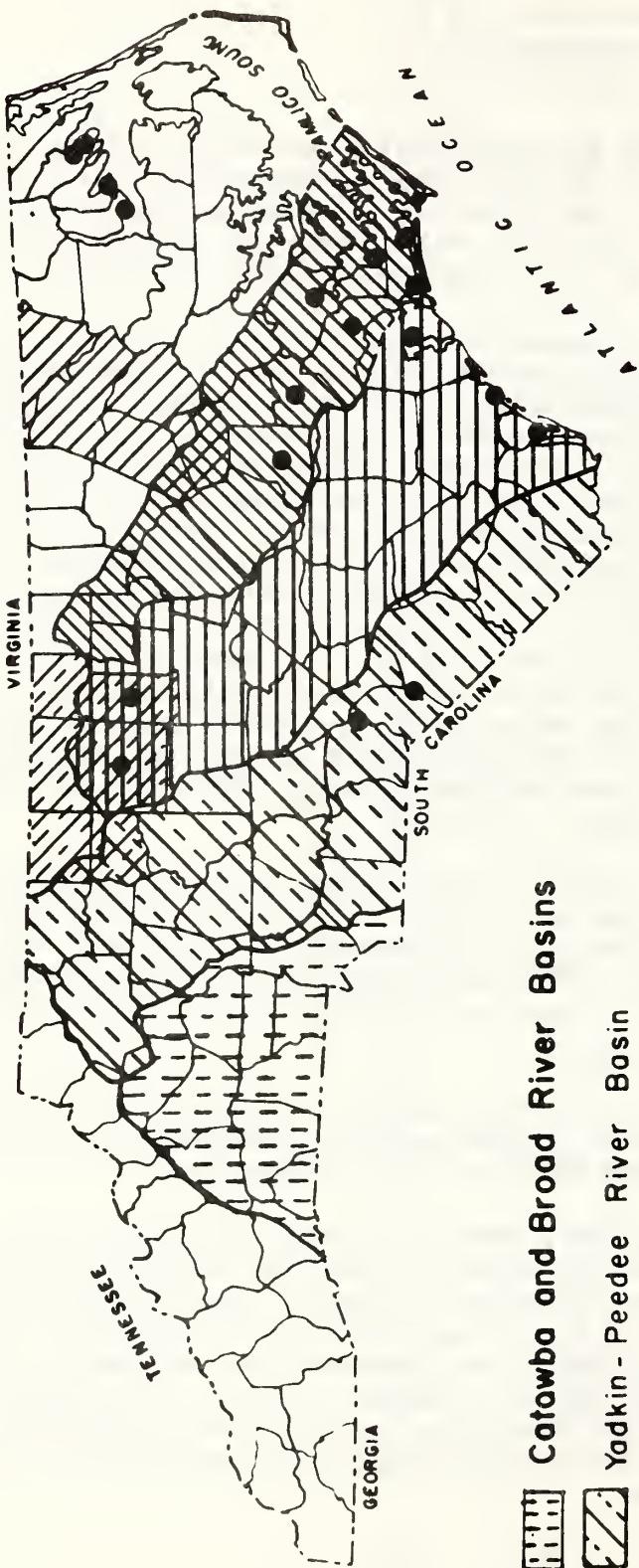
A cooperative investigation of the ground-water resources of North Carolina by the North Carolina Department of Conservation and Development and the Geological Survey, United States Department of the Interior, has been in progress since 1941. The program is under the direction of A. N. Sayre, Geologist in Charge, Ground Water Branch, U. S. Geological Survey, and J. L. Stuckey, State Geologist of North Carolina.

Detailed investigations of the ground-water resources of individual areas are being made as a part of the larger State-wide project. Such studies include the collecting of all important hydrologic data and the reconnaissance mapping of the geology. Detailed field work has been completed in 18 counties and a large amount of information has been obtained in other areas. During the war a number of investigations were made for military establishments and in defense areas. Figure 1 shows the areas and places where ground-water investigations have been made. Publications of the Department of Conservation and Development that give information on ground water include: Information Circular 3, Selected well logs in the Coastal Plain of North Carolina; Information Circular 6, A possible new source of ground-water supply in the Elizabeth City area, North Carolina; Bulletin 47, Progress report on ground water in North Carolina; Bulletin 51, Ground water in the Halifax area, North Carolina; Bulletin 55, Geology and ground water in the Greensboro area, North Carolina; and the following unnumbered reports: Hydrologic data on the Neuse River Basin, 1866-1945; Hydrologic data on the Cape Fear River Basin, 1820-1945; and Hydrologic data on the Yadkin-Pee Dee River Basin, 1866-1945.

Ground water is one of the principal natural resources of the Catawba and Broad River Basins. It is the source of supply for 19 municipalities, for nearly all rural homes, and for many industries. Adequate supplies of water are available for most consumers within the area. The supply of water in storage in the ground is continuously replenished and will last indefinitely if the extraction of water is kept within safe limits.

Detailed field investigations have been completed in only a part of the basin, but considerable basic data and other information have been obtained for all parts of the area. This report summarizes that data and information.

The basins lie principally in the Piedmont province, but the headwaters of the major streams extend into the mountain province. Both the Catawba and the Broad Rivers and their tributaries have extended themselves headward, some of the streams now rising from the eastern slope of the Blue Ridge Mountains. The streams, made swift by the steep gradients of their channels, have enormous erosive power, as shown by the hilly or mountainous topography in their headward areas. The ruggedness of topography is progressively lessened toward the southeast away from their heads, and in much of Cleveland, Gaston, and Mecklenburg Counties the topography is gently rolling to hilly, but not mountainous.



Catawba and Broad River Basins

Yadkin - Peegee River Basin

Cape Fear River Basin

Neuse River Basin

Halifax Area

Greensboro Area

- Place where special investigation was made

Figure 1

SCALE
0 25 50 75 100 Miles

Map of North Carolina showing where ground-water investigations have been made.

EXPLANATION

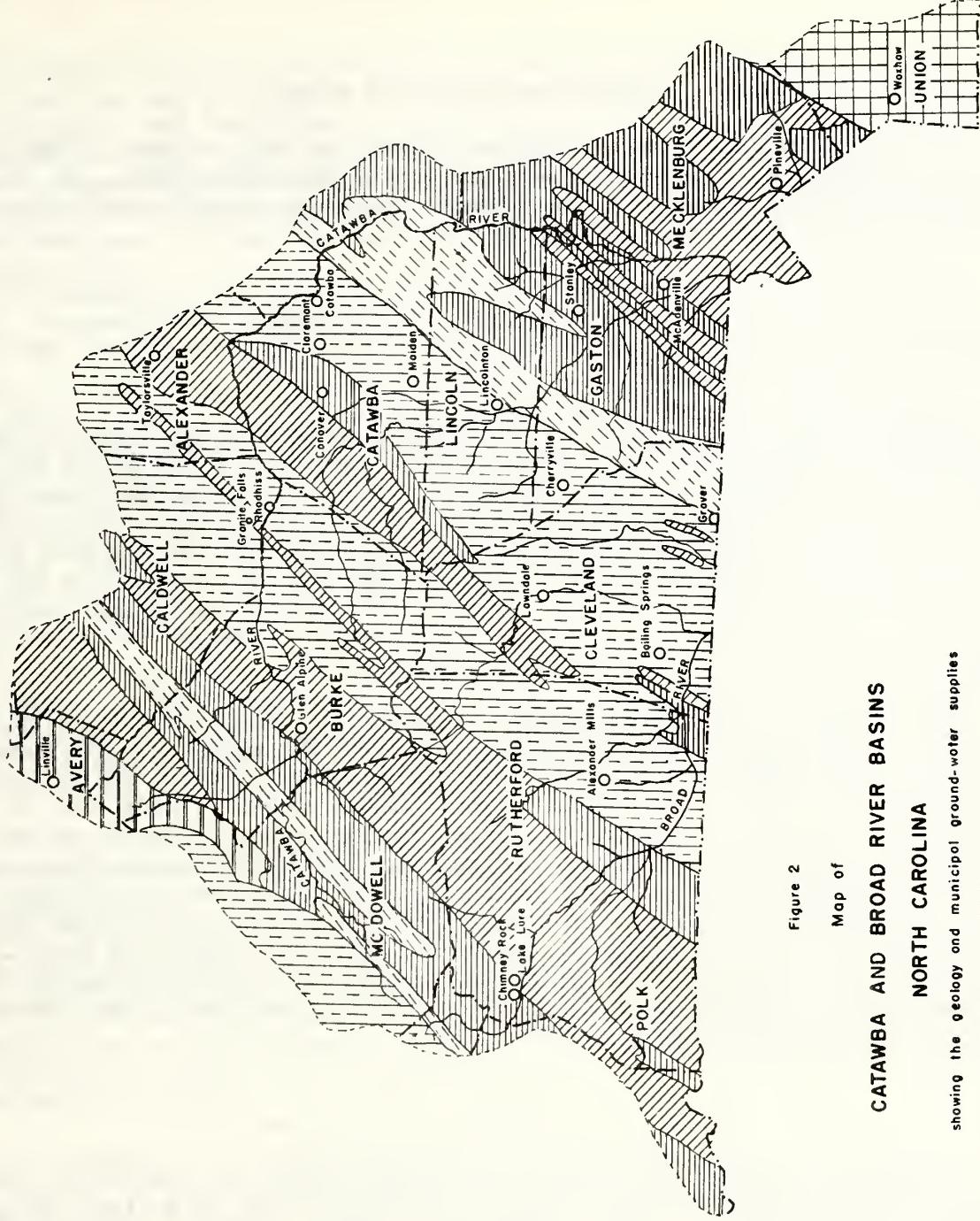
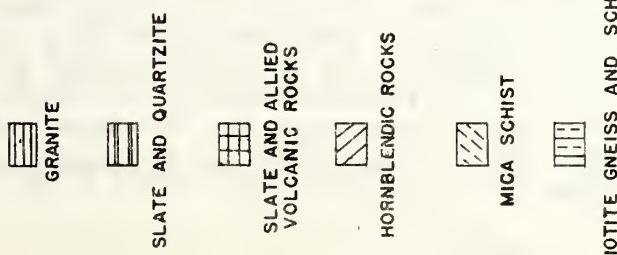


Figure 2

Map of

CATAWBA AND BROAD RIVER BASINS

NORTH CAROLINA

showing the geology and municipal ground-water supplies

Scale
0 10 20 30 40 miles

(Modified in part from Geologic Map of North Carolina)

Occurrence of ground water

The source of ground water is precipitation as rain or snow. The water falling on the earth's surface enters and moves through the soil. In the crystalline and consolidated rocks of the Piedmont the water moves largely through joints and other fractures and along cleavage planes.

Ground water moves under the influence of gravity and the point of discharge is always at a lower level than the point of recharge or replenishment. In North Carolina recharge occurs in interstream areas and the natural discharge is into streams, lakes, swamps, and the sea.

A part of the rain falling on the surface percolates downward through the earth until it reaches the zone of saturation, below which the pores and openings of the rock are completely filled with water. The surface of the zone of saturation is called the water table, and in the area studied it generally is from a few feet to about 60 feet below the land surface. Discharge of ground water is a continuous process though the rate varies from time to time. Thus the ground-water levels would recede continually if it were not for precipitation raising the water table from time to time. For this reason the water table is not a fixed surface but is continually fluctuating.

Fluctuations of the water table.— Because the source of the ground water is precipitation, the water table fluctuates with the rainfall. The correlation of ground-water level with rainfall is complicated by a number of factors. The proportion of rainfall that becomes direct stream runoff, evaporates, or reaches the water table is determined by the intensity and duration of the rainfall, the character and condition of the surface material on which the rain falls, and the rate of evaporation and the rate of transpiration of the water by vegetation. In North Carolina the water table generally recedes during the summer and autumn months in spite of heavy rainfall, because of the large amount of water lost by evaporation and transpiration. In the winter and spring months the water level generally rises, although rainfall is less, because evaporation and transpiration losses are greatly reduced.

Geology and ground-water resources

An intricate series of igneous and metamorphic rocks underlie the Catawba and Broad River Basins. Some of the older rocks, mapped as schists and gneisses, have been metamorphosed to such a degree that their original features are not everywhere clear. Much of the schist probably represents metamorphosed shales of sedimentary origin. The dark-colored gneisses, containing noticeable quantities of hornblende, represent metamorphosed basic igneous rocks, although some may have been formed from calcareous sediments. The light-colored gneisses were originally granites or some obscure rock which has been replaced or assimilated by granite. The age of most of the formations is uncertain. Most of the gneisses, slates, and schists are believed to be of pre-Cambrian age, although some parts of them may be younger. The areas mapped as granite may represent rocks of more than one period of intrusion, but it is generally thought that some of it was intruded during late Paleozoic time.

The areal geology of the basin, shown on the accompanying geologic map, is based chiefly on the geologic map of North Carolina¹ as modified by J. L. Stuckey, State Geologist, and the writers. The geology of only a small part of this area has been mapped in detail, as a consequence of which the map is generalized. In much of the area intrusive rocks, chiefly granite, have intruded the older host rocks, generally along the bedding or schistose planes. These intrusions are, in places, so numerous that most of them are too small to be mapped individually except on a very large scale map.

Factors affecting yield of wells

In the crystalline and consolidated sedimentary rocks of the Piedmont province, ground water occurs in and moves along joints and other fractures, cleavage and bedding planes, and planes of schistosity. Because drilled wells obtain their water from these openings, the wells that encounter the most and largest openings usually yield the largest supplies of water. The productiveness of the rocks ranges widely not only from one type of rock to another, but also from place to place within each rock type. Data indicate that the rocks which are predominately schist are the best aquifers. The gneisses appear to rank second in productiveness, and the granites are somewhat less productive.

One of the most important problems in the Piedmont is to select the best possible location for drilling a well to obtain the maximum quantity of water. Factors to be considered in selecting a well site include texture of the rock, amount and kind of jointing, fracturing, shearing, bedding planes, cleavage and schistosity, veins, dikes, topographic location, and thickness of weathered mantle.

The coarser-textured rocks generally are more productive than the finer-textured ones, probably because fracturing or shearing of the coarse-grained rocks produces larger openings than it does in fine-grained rocks. Wells drilled where joints, fractures, and shearing planes are closely spaced usually are more productive than wells drilled where these openings are more widely spaced. In rocks of sedimentary origin, important openings may occur along bedding planes; and in metamorphic rocks, whether of sedimentary or igneous origin, planes of cleavage and schistosity are important in the occurrence and movement of ground water. Places where these planes are prominent and closely spaced generally are more productive than places where they are widely spaced.

Quartz veins are very important avenues in the storage and movement of ground water. Quartz is a hard, brittle mineral which fractures easily and breaks into relatively large, irregular fragments when subjected to earth stresses. Ground water usually can move much more readily through quartz veins than in the adjacent rock. Wells intersecting one or more quartz veins generally are much more productive than wells which do not.

Dikes are walls of lava which were injected in a molten state into crevices in the adjacent rock. Generally the adjacent rock has been considerably fractured and broken by the injection and in most places wells drilled near dikes yield considerably

¹/Geologic map of North Carolina, N. C. Dept. Cons. and Devel., 1937.

more water than wells drilled into the undisturbed rock some distance from the dikes. However, most dikes, themselves, do not yield much water.

The rocks of the Piedmont area at most places are very deeply weathered; and at many places the thick layer of weathered material forms such an extensive cover over the underlying rock that little direct evidence is available regarding fracturing, cleavage, and the presence of veins and dikes. However, the topography frequently gives indirect evidence regarding these factors. In an area being actively worn down by erosion, as is the Piedmont of North Carolina, many hills are left because they are relatively resistant to erosion. Valleys, "draws" (small valleys or gullies), and similar depressions may be formed where the rocks are less resistant. At some places this lower resistance is due to the greater fracturing of the rock, which permits circulation of ground water and promotes chemical decay of the rocks, making them easy to erode. Obviously such places are more favorable for drilling wells than the hills. In the Greensboro area it was found that the average yield of wells drilled in topographic depressions was more than three times as large as the yield of wells drilled on hills. Another reason that a depression is a more favorable location for a well is that the natural movement of the ground water is into the depressions and away from the hills.

The thickness of the saprolite (weathered rock) is important. In the Greensboro area, where a more detailed study was made of similar rocks, the average yield of wells in which the weathered mantle was 30 feet or less in thickness was about 8 gallons a minute. The average yield of wells in which the thickness of mantle ranged from 31 to 65 feet was about 17 gallons a minute, and the average yield of wells in which the thickness of mantle was 66 feet or more was about 25 gallons a minute. The thick layer of saprolite stores large quantities of water which moves into the fractures of the underlying rock when the well is pumped.

Quality of water

Water from wells in the Piedmont generally is soft or only moderately hard. Granites and other acidic rocks of light color, containing a high percentage of insoluble silica, generally yield water very low in dissolved mineral matter; the dissolved solids generally ranging from 50 to 125 parts per million. The hornblendic and other basic rocks of dark color, on the other hand, generally yield water somewhat higher in mineral matter, the range of dissolved solids being from 100 to 500 parts per million. Most wells yield water containing little or no iron but some yield water with objectionable amounts of iron. The temperature of the water ranges from about 60° to 64° F. Analyses of representative samples are given in the appended table.

Water-bearing character of the rocks

Biotite gneiss and schist.—Rocks included in the biotite gneiss and schist are the most extensive in the Catawba River basin. They are especially well developed in broad belts extending northeastward through the east-central part of the area, through Cleveland, western Lincoln, and central Catawba Counties and through eastern Rutherford, Burke, and Caldwell Counties and western Alexander County.

The predominant rock in the group is a light-colored gneiss or schist in which biotite is the chief dark mineral. Owing to the extreme deformation to which the rocks of this group have been subjected and to the intimate injection of intrusive rocks in layers parallel with the gneissic or schistose planes, the gneiss is

considerably banded. Granite generally is the injected material and it occurs as discrete layers from a fraction of an inch to many feet thick and as an assimilated composite rock representing both the granite and the host rock into which it was injected. Layers or sheets of dark hornblendic rocks form a subordinate part of this group.

Although contacts between individual rocks of the group may be distinct locally, over a broad area contacts between major rock types are distinct in only a few places. For example, where rocks of the schist and gneiss group are adjacent to a large granite mass, a zone occurs in which it is difficult to determine whether the granite or schist is predominant.

The rocks of this group contain numerous fractures along which ground water circulates. Openings along the planes of schistosity which dip at high angles, are the most prevalent and therefore the most important in the occurrence of water. However, joints crossing the schistosity are numerous enough to permit the horizontal circulation of water in the area surrounding a well.

Only a rough average of yields from wells deriving water from the gneiss and schist group can be made, owing to the facts that the yields of wells and the type of rocks penetrated are not always certain. Also, certain other factors bearing on the yield of wells, such as topography, structure, and degree of weathering affect the yield of individual wells. The average yield of 16 wells in rocks of the gneiss and schist group is 31 gallons a minute. Careful consideration of all the factors mentioned above in the selection of a well site could be expected to result in a somewhat larger average yield for wells drilled in rocks of this group.

Schist.- The schist unit occurs as a northeast-trending belt passing through eastern Cleveland, western Gaston, central and eastern Lincoln, and eastern Catawba Counties. It is not uncommon in other parts of the basins but generally is subordinate to other rock types. The schist is, for the most part, micaceous and is commonly composed of quartz and mica. It is difficult to distinguish the schist from certain rocks of the schist and gneiss group and the contacts between these types is arbitrary. Intrusions of granite are common in the schist and in places granite makes up much of the area mapped as schist. In places the schist shows evidence of recrystallization as a result of the emplacement of granite, and the resulting rock is a coarsely crystalline aggregate of quartz and mica. The intrusions in the schist range in thickness from a fraction of an inch to many feet and are generally aligned with the schistosity, giving the rocks a banded appearance.

The schist is the most productive water-bearing unit in the basins for which statistical data are available. The average yield of 36 wells in the schist is approximately 38 gallons a minute. The major planes along which water moves are parallel to the schistosity but cross-cutting joints are also common. Wells intersecting schistose planes that crop out in an area favorable for influent seepage, such as a flat surface or a lowland, likely will have high yields.

Hornblendic rocks.- Basic rocks, generally hornblendic, are common throughout the basins, but only a few areas are large enough to show on the accompanying map. Areas in which the hornblendic rocks are prevalent include western Catawba County, parts of Gaston and Mecklenburg and parts of Polk, Rutherford, McDowell, Burke, and Caldwell Counties. They vary considerably in mineral composition, texture, and

degree of metamorphism and obviously are not all of the same age. Some of these rocks may be intrusive sills, some may represent limestone beds altered by granitization, and some may represent the basic component formed by differentiation within a magma. Large bodies of hornblendic rocks are not common, the usual occurrence being as bands a few inches or a few feet wide alternating with more acid rocks. The hornblendic rocks in the eastern part of the area, especially in Mecklenburg County, are different from those in the west in that the hornblendic rock is intermixed--generally as discrete but small bodies -- with granite; only in a few places does either the granite or the hornblendic rock occur in bodies large enough to be mapped separately.

The hornblendic rocks, as described, include the basic rocks of the area and consequently are generally dark in color. As a rule they weather easily into a deep red or brown soil. The composite hornblendic and granite rock of Mecklenburg County yields a distinctive black soil spotted with white feldspar crystals, the Mecklenburg and Iredell soil series.

Beds of the hornblendic rocks are generally so thin that many individual wells penetrate them completely and pass into rocks of other types. The rocks are well jointed, the joints crossing the foliation being more prominent than those in other rocks in the basins. The well-developed joints and the fact that the easily eroded hornblendic rocks generally occur in flat or low places suggest that the average yield from wells penetrating these rocks may be high, but few data are available. However it is possible that the average might exceed 40 gallons a minute.

The hornblendic rocks contain appreciable quantities of calcium, magnesium, and other mineral constituents easily soluble in ground water. Thus the water from wells penetrating one or more beds of these rocks should contain more mineral matter in solution than water from the other rocks. However, none of the analyses in the accompanying table are of water derived solely from hornblendic rocks.

Slate and associated rocks of volcanic origin.-- Rocks of the group mapped as slate and associated rocks of volcanic origin are exposed only in the southeastern corner of the area, mostly in Union County, but they extend northeastward beyond the area for a considerable distance. Although a pronounced slaty cleavage now characterizes most of these rocks, they are composed of both lava flows and pyroclastic materials all highly metamorphosed. Some are schists which originated as water-laid sediments in which considerable sand and clay was mixed with volcanic ash.

As only a small part of the slate belt falls within the basins, little information about its ground water is available. However, the rocks of the slate belt, in general, are fairly good producers of water. Where the cleavage or schistosity is well developed, wells yielding as much as 50 to 75 gallons a minute are common. As is the case with other crystalline rocks, topographic location and thickness of weathered mantle rock are important factors in selecting a well site in these rocks.

Slate and quartzite.-- Rocks of the group mapped as slate and quartzite are restricted to a belt near the headwaters of the Catawba River in the northwestern part of the basin. The chief rocks include white quartzite, and slates derived from argillaceous shales. The slate and quartzite have not been injected by granite, as have the other rocks in the basins.

No detailed study has been made of the water-bearing features of the quartzite and slate. Both rocks are characterized by considerable jointing and therefore are believed capable of taking in considerable water. Experience derived from the study of slates in other areas suggests that the slate may absorb water readily but yield it with difficulty, owing to the small size of the openings along the parting planes. The topography in the outcrop area of the slate and quartzites is hilly, and topographic location is a major factor in the selection of well sites in these rocks. Wells drilled in lowlands into these rocks should yield more water than those on uplands. In a few places in lowlands, wells drilled into the quartzite might flow under slight pressure.

Granite.- Although only the larger areas of granite are shown on the accompanying geologic map, that rock underlies much of the area. The granitic rocks vary considerably in texture, in appearance, and in field relations with other rocks. It is generally thought that much of the granite was intruded during or immediately following the mountain-building period which produced the Appalachian Mountains near the close of Paleozoic time. Some of the granite may be older.

The granite was emplaced both as large, rather homogeneous masses and as smaller bodies penetrating pre-existing rocks. The latter type includes sheetlike bodies along the foliation of gneisses and schist and random veins penetrating pre-existing igneous rocks. All of the other rocks except the quartzite and slate were intruded by the granite to some extent. At many places it is difficult to say whether the granite or the rock which it intruded predominates in quantity.

Ground water occurs in the granite chiefly in joints and fractures and along shear zones. Horizontal joints are common and are very important in transmitting water. Because the horizontal joints decrease in number with depth, less and less ground water is obtained with increasing depth. At places where the granite has been considerably sheared and fractured, wells will yield moderate supplies of ground water, but in areas where it is massive little or no water can be obtained. The average yield of 60 wells drilled in granite in the Catawba River Basin is 22 gallons a minute. The average yield of wells can be increased considerably by a careful selection of drilling locations, basing the choice on geologic and topographic evidence. The number and size of joints and fractures in granite decrease rapidly with increasing depth, and most wells obtain a large proportion of their water at relatively shallow depth. Drilling beyond 250 or 300 feet is rarely advisable and wells with small yields at 150 to 200 feet have little chance of getting more water at greater depth.

Public ground-water supplies

There are 19 municipal ground-water supplies in the Catawba-Broad River basin, serving a population of 21,246 (1940 census).

Alexander Mills, in Rutherford County, obtains its water from several shallow wells and one deep well in schist. The deepest well is 340 feet deep and yields 60 gallons a minute. The water is not treated.

Catawba, in Catawba County, obtains water from three drilled wells, the deepest of which is 365 feet deep. These wells end in schist which contains much granite. Two of these wells supposedly yield 60 gallons a minute each and the other yields 32 gallons a minute. The water is not treated.

Cherryville, in Gaston County, obtains its water from six drilled wells penetrating granite. The wells range in depth from 125 to 244 feet and in yield from 30 to 75 gallons a minute. The water from these wells is not treated.

Chimney Rock, in Rutherford County, obtains its water from a public spring. The yield of the spring is 20,000 gallons a day and the water is chlorinated.

Claremont, in Catawba County, obtains its water from a deep well approximately 300 feet deep. The well ends in schist and about 40,000 gallons a day is pumped from it. The water is not treated.

Conover, in Catawba County, obtains its water from three wells ranging in depth from 263 to 600 feet. Both schist and granite are penetrated in the wells. Yields range from 47 to 90 gallons a minute. The water is chlorinated.

Glen Alpine, in Burke County, obtains its water from two drilled wells 317 and 349 feet deep, respectively. The 349-foot well yields 11 gallons a minute and the 317-foot well 120 gallons a minute. It is believed that the water is derived from hornblendic rocks. The water is not treated.

Grover, in Cleveland County, obtains its water from two wells 48 and 84 feet deep, respectively. The yields are 50 and 40 gallons a minute, respectively. The wells end in a combination of schist and granite. The water is not treated.

Lawndale, in Cleveland County, obtains its water from a well approximately 150 feet deep penetrating schist and yielding 60 gallons a minute. The water is not treated.

Linville, in Avery County, obtains water from a well 245 feet deep which yields 60 gallons a minute. The water is not treated.

Lincolnton, in Lincoln County, obtains part of its water from wells and part from an impounding reservoir on Walker Branch. The combined yield of six wells is about 200 gallons a minute, but three of the wells, ranging in depth from 142 to 184 feet, have a combined yield of only 24 gallons a minute. Thus the other three are rather productive. All the wells penetrate granite.

McAdenville, in Gaston County, does not have a public water supply, but two wells owned by Stowe Mills, Inc., furnish water to this community of 887 people. A well 523 feet deep yielding 100 gallons a minute is the main source of supply. The other well, 80 feet deep, is capable of furnishing 11 gallons a minute.

Maiden, in Catawba County, obtains its water from four wells ranging in depth from 80 to 535 feet. Two of the wells yield 30 gallons a minute each. The water is not treated.

Pineola, in Avery County, obtains 20,000 gallons of water a day from springs. The water is treated with chlorine.

Pineville, in Mecklenburg County, obtains its water from a well 134 feet deep ending in diorite and yielding 75 gallons a minute. The water is not treated.

Rhodhiss, in Caldwell County, obtains its water supply from three wells, the deepest of which is 501 feet deep and yields about 90 gallons a minute. Water from two of these wells is softened through the use of zeolite.

Stanley, in Gaston County, obtains its water from several wells penetrating granite. The wells range in depth from 213 to 500 feet and in yield from 8 to 45 gallons a minute. The water is not treated.

Taylorsville, in Alexander County, obtains its water from three drilled wells. The main well is 200 feet deep and yields 60 gallons a minute. The water is not treated.

Waxhaw, in Union County, obtains its water from a well 253 feet deep yielding 60 gallons a minute. The water is not treated.

RECORDS OF WELLS

Following the table of analyses are tables giving data on some 300 representative wells in the Catawba and Broad River Basins, arranged by counties in alphabetical order. Included are data on the owner of well, its location, the driller, the depth and diameter, the amount of casing, the depth to water level, the yield, and the aquifer penetrated.

Analyses of water from wells in the Catawba and Broad River Basins

Analyzed by the U. S. Geological Survey
 (Well numbers correspond to the number in the tables of well data)
 (Parts per million)

Location	Well No.	Depth (feet)	Date	Sili-ca (SiO ₂)	Iron (Fe)	Manganese (Mn)	Cal-cium (Ca)	Magn-e-sium (Mg)	Sodium and po-tassium (Na+K)	Bi-car-bo-nate (HCO ₃)	Sul-fate (SO ₄)	Chlo-ride (Cl)	Fluo-ride (F)	Ni-trate (NO ₃)	Dis-solved Solids	Total hardness as CaCO ₃
Alexander County:																
Taylorsville	1	200	3/30/48	31	0.26	0.27	16	1.6	11	75	7.7	1.2	0.2	0.0	105	46
Avery County:	1	186	11/4/47	18	0.15	0	5.2	1.0	6.2	28	2.3	1.9	0	3.0	58	17
Crossnore	1	245	9/14/48	14	0.19	0	5.6	.9	2.2	22	.8	1.0	.1	2.4	39	18
Linnville	2															
Caldwell County:																
Rhodhiss	8	325	1/3/49	21	0.82	0.44	46	6.7	17	204	3.0	5.8	.1	0	200	142
Do	9	148	1/3/49	20	2.7	0.43	21	2.7	9.1	88	5.5	3.6	.1	.1	106	64
Do	10	151	1/3/49	16	0.22	0	9.2	2.1	4.1	40	5.5	1.1	.1	.1	58	32
Hudson	20	280?	6/18/48	26	.62	.04	13	2.4	7.3	50	15	.9	.1	.1	95	42
Catawba County:																
Catawba	3	365	8/3/48	38	.10	0	7.8	1.9	9.7	35	2.7	4.5	.9	10	100	27
Do	4	285	8/3/48	35	.13	0	8.7	3.6	7.1	53	1.3	2.4	.2	4.0	90	36
Do	5	351	8/3/48	34	.14	0	17	5.8	10	55	3.7	18	.4	16	143	66
Conover	10	600	12/2/46	30	.17	.13	22	3.8	7.6	88	11	2.0	.2	.1	120	70
Do	11	535	12/2/46	24	.09	0	20	3.0	6.8	74	13	1.8	.1	.1	106	62
Maiden	30	80	10/23/47	30	.06	0	9.6	3.6	5.7	48	1.7	3.0	.1	6.9	86	39
Do	31	100	10/28/47	28	.06	0	10	3.4	5.6	49	1.9	2.5	.1	6.5	88	39
Do	32	165	10/28/47	32	.06	.03	14	4.2	8.0	74	3.4	2.6	.1	1.9	106	52
Do	33	535	10/28/47	33	.11	0	8.6	3.4	4.5	49	2.2	1.1	0	1.4	79	35
Cleveland County:																
Lawndale	30	150	12/8/48	14	.21	0	6.0	2.3	5.3	20	3.4	7.0	0	7.5	58	24
Boiling Springs	43	305	11/19/48	32	.51	.10	8.2	2.8	9.1	47	9.7	1.8	.1	.5	92	32
Do	44	357	9/16/47	33	.70	0	8.6	2.7	8.6	48	8.4	1.6	.2	.4	90	33
Do	47	220	9/16/47	42	1.3	0	14	1.5	13	71	8.4	1.5	.2	0	113	41
Shelby	62	165	11/13/46	22	.21	0	28	2.6	7.7	86	13	9.2	.1	0	129	81
Grover	111	84	11/15/46	28	.09	0	3.2	1.7	17	10	1.0	24	0	12	106	15
Do	112	48	7/23/47	25	.38	.70	6.6	2.4	68	17	1.4	107	.1	10	242	26

Analyses of water from wells in the Catawba and Broad River Basins

(continued)

Analyzed by the U. S. Geological Survey
 (Well numbers correspond to the numbers in the tables of well data)
 (Parts per million)

Location	Well No.	Depth (feet)	Date	Sili-ca (SiO ₂)	Iron (Fe)	Manganese (Mn)	Cal-cium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bi-car-bo-nate (HCO ₃)	Sul-fate (SO ₄)	Chlo-ride (Cl)	Fluo-ride (F)	Ni-trate (NO ₃)	Dissolved Solids	Total hardness as CaCO ₃
Gaston County:																
Stanley	9	350	11/20/47	32	0.23	0.0	.44	3.7	11	160	6.7	7.0	0.3	0.6	166	125
Do	10	500	11/20/47	20	1.9	0	.31	5.0	8.4	124	10	2.5	.2	0	138	98
Do	11	350	11/20/47	31	.41	0	.55	5.1	25	107	113	2.2	1.0	1.1	290	158
Cherryville	46	238	2/16/48	29	.16	0	8.3	2.9	7.6	40	5.3	3.1	.0	8.0	92	33
Do	47	182	2/16/48	35	.15	0	10	4.4	8.3	40	1.9	13	.0	10	111	43
North Belmont	97	340	7/11/45	37	.09	---	12	4.7	6.4	71	1.2	1.6	.1	1.6	101	49
Gastonia	182	267	7/11/45	34	1.0	---	8.3	1.3	10	31	1.3	12	.1	5.1	96	26
Lincoln County:																
Lincolnton	66	175	10/3/45	28	.14	---	3.6	1.4	7.0	29	2.1	2.4	.0	.7	62	15
Long Shoals	89	129	10/4/45	28	.07	---	5.0	2.6	4.8	34	1.8	1.8	.0	1.7	64	23
McDowell County:																
Marion	1	158	12/18/46	23	.09	0	6.1	2.3	7.6	32	1.3	3.5	.2	10	77	25
Mecklenburg County:																
Charlotte	133	200	7/21/45	37	.15	---	29	9.8	11	108	29	10	.1	3.5	189	113
Pineville	235	134	6/25/47	60	.09	0	.55	26	20	185	94	22	.5	6.0	395	244
Polk County:																
Tryon	16	38	8/16/47	14	.29	.20	6.2	2.9	22	35	32	5.6	.1	5.9	106	27
Rutherford County:																
Spindale	24	650	7/6/47	24	.57	0	16	2.4	8.1	63	11	2.9	.1	0	98	50
Forest City	28	60	5/25/48	13	.10	0	3.3	1.7	3.8	13	1.4	6.8	.1	2.0	41	15
Do	29	60	5/25/48	12	.11	0	2.6	1.6	3.2	18	1.2	1.8	.1	1.7	32	13
Do	30	340	5/23/48	20	.10	0	4.9	1.5	4.1	26	2.2	1.5	.1	1.8	50	18
Ellenboro	35	59	7/5/47	6.3	5.2	0	1.7	2.1	9.5	20	1.4	6.6	.1	7.5	47	13

Records of wells in the Catawba and Broad River Basins

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Alexander County									
1	Taylorsville	Town	-----	200	8	-----	-----	60	
2	Do	do	-----	---	-	-----	-----	---	
3	Do	do	-----	---	-	-----	-----	---	
4	Do	Brookwood Fabric Co.	Hickory Well Co.	458 201	6	58	40	9	
	Stony Point	School	do	-----	6	88	40	45	
Avery County									
1	Crossnore	Crossnore, Inc.	-----	186	6	42	10	70	Schist.
2	Linville	Linville Co.	-----	245	10	80	---	60	
4	Pineola	Marmon Estate	-----	---	-	---	---	250	
Burke County									
1	Hildebrand	Childers Hosiery Mill	Virginia Well Co.	107	6	50	---	12	
2	Do	Hildebrand Hosiery Mill	do	154	6	49	---	40	
3	Do	Quaker Meadows Mill	Hickory Well Co.	400	6	60	---	75	
4	Do	Hickory Special- ty Co.	R. E. Faw & Sons	159 $\frac{1}{2}$ 225	6	112	30	25	Drawdown 50 ft.
5	Valdese	General Hospital	Hickory Well Co.	225	6	86	40	45	Drawdown 65 ft.
6	Icard	Icard Cordage Co.	do	217	8	64	28 $\frac{1}{2}$	65	Drawdown 120 ft.
7	Lenoir-Morganton	Airport	do	225	8	73	120	30	Drawdown 30 ft.
8	Glen Alpine	Town	do	349	8	78	20	11	
9	Do	do	do	317	8	87 $\frac{1}{2}$	25	120	
10	Morganton	Alpine Mills	do	67	6	39	40	40	Drawdown 40 ft.
11	Do	Henridon Furni- ture Industries, Inc.	do	101 $\frac{1}{2}$	6	105	30	25	Drawdown 70 ft.
Caldwell County									
1	Granite Falls	Town	Virginia Well Co.	495	10-8	111	---	---	
4	Patterson	Yadkin Yarn Co.	R. E. Faw & Sons	190 386	--- 10	55 56	22 ---	27 ---	Drawdown 104 ft.
5	Rhodhiss	Town	do	-----	-----	-----	-----	-----	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Diameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Caldwell County (continued)									
6	Rhodhiss	Town Rhodhiss Mills	R. E. Faw & Sons	501	10	27	12	30	Drawdown 188 ft.
8	Do	do	Virginia Well Co.	148	8	42	70	45	Drawdown 100 ft.
9	Do	do	do	151	6	55	43	90	Drawdown 29 ft.
10	Do	Dudley Shoals Cotton Mill Co.	R. E. Faw & Sons	600	6	40	50	20	Drawdown 70 ft.
11	Dudley Shoals	do	do	418	6	35	20	2	
12	Do	do	do	539	8	70	—	1 3/4	
13	Whitel	Nelson Cotton Mill	do	87	8	47	—	14	
14	Do	do	do						
15	Lenoir	Caldwell Furniture Co.	Hickory Well Co.	249	6	66	30	80	Drawdown 120 ft.
16	Do	do	do	200	6	66	22	14	
17	Do	do	do	198	6	32	—	24	
18	Do	Kent-Coffey Mfg. Co.	R. E. Faw & Sons	84 1/2	8	48	28	80	
19	Hudson	R. Hibriten Land and Lumber Co.	do	1236	8	56	17	300	Drawdown 183 ft.
20	Do	do	do	280?	8	—	—	160	
Catawba County									
3	Catawba	Town	Virginia Well Co.	365	6	150	60	60	
4	Do	do	do	285	6	103	—	32	
5	Do	do	Hickory Well Co.	352	8-6	100	—	60	
6	Claremont	do	R. E. Faw & Sons	300	—	—	—	10	
7	Do	do	do	—	—	—	—	—	
8	Conover	Lenoir Chair Co.	Virginia Well Co.	201	6	43	—	90	
9	Do	do	do	300	6	67	—	5	
10	Do	Town	R. E. Faw & Sons	600	6	—	—	90	
11	Do	do	do	535	6	—	—	76	
12	Do	do	do	263 1/2	10	81 1/2	4	47	
13	Do	do	do	217	6	64	33	48	
14	Hickory	Streamline Tool Co.	Hickory Steam Laundry	330	6	71	74	70	
15	Do	do	Hickory Well Co.	400	6	94	60	60	Drawdown 56 ft.

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Catawba County (continued)									
16	Hickory	Hickory Packing Co.	Virginia Well Co.	410	6	54	56	45	
17	Do	Hickory	Hickory Well Co.	489	8	—	80	135	
18	Do	Spinning Co.	Virginia Well Co.	402	8	92	—	75	
19	Do	Marlow Hosiery Ivey Weavers, Inc.	do	238½	6	70	—	25	
20	Do	Ellis Hosiery Mill	do	298	6	120	—	—	
21	Do	Catawba Country Club	do	343	6	41	10	55	
22	Do	Drive-in-theater	Hickory Well Co.	400	8	50½	82	58	
23	Do	(J. P. Mull) Radio Station WIRC	R. W. Faw & Sons	194	6	114	55	30	
24	Do	R. E. Faw & Sons	do	95	6	49½	20	30	
25	Do	J. & J. Spinning Co.	do	160	8	122	5	12	
26	Maiden	do	do	156	6	73	20	7	
27	Do	do	do	285	6	28	22	10	
28	Do	Carolina Mills Town	do	200	6	49	20	9	
29	Do	Hickory Well Co.	do	333	6	123½	54	30	
30	Do	do	do	80	6	60	—	30	
31	Do	do	do	100	6	60	—	30	
32	Do	do	do	165	6	80	—	30	
33	Do	do	do	529	8	84	—	30	
34	Newton	Hollar Court Co. Clyde Fabrics, Inc.	R. E. Faw & Sons	150	6	97	30	20	
35	Do	Newton Radio Station	do	601	10-8-6	60	42	74	
36	Do	do	do	24	6	52	18	25	
Cleveland County									
23	Waco	Town	Charlie Boggs	110	3	—	12	9	
27	Double Shoals	Double Shoals Cotton Mill	—	—	—	—	—	3-4	Schist.
28	Do	do	Virginia Well Co.	42	6	—	—	10	
29	Do	do	do	190	6	—	—	12	
29a	Do	do	do	200	6	—	24	½	
30	Lawndale	Lawndale Cotton Mills	Ralph Robbins	150	6	—	—	60	Schist.

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Cleveland County (continued)									
43	Boiling Springs	Town	R. E. Faw & Sons	305	8	104	50	125	Schist and gneiss.
44	Do	do	do	357	8	110	50	50	do
47	Do	do	do	220	8	63	10	50	do
57	Shelby, 2½ miles W of	Ora Mill Co.	—	180	6	—	—	20	
58	Do	do	—	150	6	—	11	30	
59	Do	do	—	150	6	—	11	30	do
60	Do	Dover Mill Co.	A. B. Taylor	165	6	—	10-20	40	do
61	Do	do	do	165	6	—	10-20	20	do
62	Do	do	do	165	6	—	will flow	50	do
64	Shelby	Shelby Cotton Mills	—	100	6	—	—	2	
65	Do	do	Virginia Well Co.	1205	8	—	16	16	
66	Do	do	A. B. Taylor	288	5 5/8	—	—	10	
67	Do	Belmont Mills	—	200	to	—	—	5?	
68	Do	Lilly Mills Co.	Robbins	186	5 5/8	—	5 1/4	20	
69	Do	do	do	104	5 5/8	48	4 1/2	50	
73	Do	Esther Mills, Corp.	—	262	5 5/8	35	15	15	
74	Do	do	A. B. Taylor	150	5 5/8	40	17 1/2	15	
96	Kings Mountain	Park Yarn Mills, Inc.	—	—	—	—	—	—	
97	Do	Neisler Mills, Inc.	Virginia Well Co.	78	4	23	—	19	
98	Do	do	do	430	8	—	57	25	
99	Do	do	Ralph Robbins	262	8	61	55	15	
104	Do	do	do	90	8-6	90	—	80	
105	Do	do	Virginia Well Co.	147 1/2	8	32	15	55	
106a	Do	do	Hickory Well Co.	750	8	—	—	60	
106b	Do	do	do	603	8-6	101 1/2	35	33	
106c	Do	do	do	200	6	56	40	53	
111	Grover	Minette Mills, Inc.	Ralph Robbins	142	6	72	27	25	
112	Do	do	do	84	8	36	27	50	
130	Cliffside	Duke Power Co.	do	48	8	—	—	8	
			do	247	6	—	—	—	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di-ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
131	Cliffsde	Duke Power Co.	Ralph Robbins	174	6	—	—	15	
133	Do	do	A. B. Taylor	72	6	40	—	16	
Cleveland County (continued)									
9	Stanley	Town	Virginia Well Co.	350	8	—	—	45	Granite.
10	Do	do	do	500	8	—	—	28	do
11	Do	do	do	350	8	—	—	15	do
11a	Do	do	R. E. Faw & Sons	400	8	66	17	21	do
11b	Do	do	do	213	8	76	—	—	do
12	Do	Lola Mills, Inc.	do	70	6	25	25	8	do
13	Do	do	do	85	6	—	—	9	do
15	High Shoals, 2 miles SE of High Shoals	Hardin Mfg. Co. Carolinian Mill	do	226	8	—	26	25	do
16	Do	do	do	319	8-6	—	—	30	do
17	Do	do	R. E. Faw & Sons	351	8	—	—	45	Schist.
18	Do	do	do	100	4	—	—	20	Granite.
18a	Do	do	R. E. Faw & Sons	454	8	77	37	15	do
18b	Do	do	do	149½	6	61	19	30	Drawdown 80 ft.
36	Cherryville	Carlton Mills	Ralph Robbins	97	5 5/8	—	—	25	
37	Do	do	do	118	5 5/8	—	—	25	
38	Do	do	Hickory Well Co.	300	6	—	—	15	
39	Do	Carriers	Rhyne-Hauser Co. (Plant No. 1)	170	8	—	—	28	
40	Do	do	do	190	6	—	—	20	
41	Do	do	Dora Yarn Mills	200	6	—	—	25	
42	Do	do	Ralph Robbins	250	5 5/8	46	5½	10	
42a	Do	do	do	300	8	16½	12	40	
43	Do	Town	Lee	180	8	—	—	50	
46	Do	do	do	238	8	—	—	75	
47	Do	do	do	182	6	—	—	30	
55	Do	Nuway Spinning Co.	Ralph Robbins	178½	5 5/8	118	41	18	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet) below surface)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Gaston County (continued)									
56	Cherryville	Nuway Spinning Co.	Ralph Robbins	150½	5 5/8	—	—	—	10
57	Do	Rhyne Hauser Mfg. Co. (Plant No. 2)	do	196½	5 5/8	80	8	80	
58	Do	do	do	145	5 5/8	118	—	10	
59	Do	Howell Mfg. Co.	do	139	5 5/8	—	—	26	
60	Do	do	do	90	5 5/8	—	—	18	
61	Do	do	do	90	5 5/8	—	—	5	
73	Dallas	Moroweb Cotton Mills, Co.	—	65	6	—	—	7	
75	Spencer Moun- tain	Spencer Mountain Mill	R. E. Faw	82	6	14	18	6	Quartzite and schist.
76	Mount Holly	Globe Mills, Inc.	—	143	8	—	29	15	
77	Do	Kendrich Brick and Tile Co.	—	185	2	—	—	10	
84	Do	Superior Yarn Mills Tuckasegee Plant	R. E. Faw	223	8	—	—	46	
87	North Belmont	Acme Spinning Co.	—	193	6	—	—	10	
88	Do	do	—	390	8	—	—	50	
89	Do	do	—	527	8	—	—	45	
90	Do	Linford Mills, Inc.	—	300	8	—	—	35	
91	Do	Perfection Spin- ning Co.	—	—	—	—	—	—	
93	Do	Stowe Spinning Co.	284	8	—	—	—	60	
94	Do	Hickory Well Co.	1053	10-8-6	45	—	—	85	
95	Do	Ralph Robbins	85	6	—	—	—	5	
96	Do	do	300	10	—	—	—	12	
97	Belmont	Belmont Abbey South Fork Mfg. Co.	225	8	—	—	—	14	
98	Do	Virginia Well Co.	340	8	60	23	—	116	
100	Do	Sydnor Well Co.	325	8	—	—	—	60	
		Sterling Spinning Co.	375	10	—	—	40	40	4

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Gaston County (continued)								
102	Belmont	Crescent Spinning Co.	R. E. Faw	132 128	10 3	85 90	— —	5 7
103	Do	National Yarn Co.	—	—	—	—	—	—
106	Do	Imperial Yarn Mills	W. A. Kirkley	148 103	3 6	— —	35 —	6 8
108	Do	do	—	—	—	—	—	—
111	Do	Montbell Ice & Fuel Co.	—	80	6	— —	— —	30 —
117	Do	Eagle Yarn Mills, Inc.	Wine	365	8	— —	— —	27 —
121	Gastonia, $\frac{1}{4}$ miles SE of McAdenville	Plantation Pipe-line	Hamilton Stowe Mills, Inc.	500 523 80	8 10-8 5 5/8	60 — —	— 21 —	100 100 11
132	McAdenville	do	Hickory Well Co.	—	—	—	—	Schist. do
133	Do	do	Robbins	—	—	—	—	—
142	Gastonia, $2\frac{1}{2}$ miles E of Gastonia Country Club	Akers Motor Lines, Inc.	Ralph Robbins	60	6	— —	— —	20 —
144	Gastonia, 2 miles E of Gastonia, $3\frac{1}{4}$ miles NE of Gastonia, $\frac{1}{4}$ miles NE of Do	A. M. Smyre Mfg. Co.	105 $\frac{1}{2}$ 140 251	5 5/8 5 5/8 6	76 — 123	— — 42	26 — 42	18 — 12
145	Do	do	do	130	5 5/8	—	19	20
146	Do	do	do	178	5 5/8	60	18	10
147	Do	Ranlo Mfg. Co.	do	500	8	85	42	102
150	Do	Textiles, Inc.	Priscilla Plant	191	5 5/8	87	50	18
151	Do	Rex Spinning Co.	Virginia Well Co.	—	—	—	—	—
154	Do	Ralph Robbins	do	—	—	—	—	—
156	Gastonia, $2\frac{1}{2}$ miles NE of Do	Groves Thread Co.	do	165	6	— —	— —	90 35
157	Do	do	do	145	5 5/8	— —	— —	— —

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet) below surface)	Yield (gallons a minute)	Aquifer and Remarks
Gaston County (continued)								
161	Gastonia, 2½ miles NE of	Groves Thread Co.	Ralph Robbins	132	6	—	—	Granite.
163	Do	Flint Mfg. Co.	do	69½	5	—	12	do
165	Do	do	do	167	5	—	11	do
168	Gastonia	Sunrise Dairy	do	136	6	15	30	do
169	Do	do	do	96	6	15	15	do
170	Gastonia, 1 mile S of	Textiles, Inc.	—	120	6	—	—	do
		Seminole Plant	—	135	6	—	—	do
		Ruby Cotton Mill	—	185	6	—	—	do
171	Do	do	—	—	—	—	—	do
173	Do	Dixon Mills	Ralph Robbins	185	5	—	5	do
175	Gastonia, 1½ miles S of	do	do	53	5	—	8	do
176	Do	Textiles, Inc.	—	135	6	—	5	do
177	Gastonia, 2 miles S of	Victory Plant	—	—	—	—	—	do
178	Gastonia, 2½ miles S of	Textiles, Inc.	—	—	—	—	—	do
		Myers Plant	—	—	—	—	—	do
179	Do	do	Ralph Robbins	110	5	—	5	do
181	Do	Rex-Hanover Mills, Inc., Hanover	do	103½	5	—	16	do
		Plant	do	—	—	—	—	do
		do	Ware	180	6	—	20	do
182	Do	Textiles, Inc.	—	267	8	112	30	do
184	Gastonia, 3½ miles S of	Ridge Plant	Ralph Robbins	185	5	—	—	do
		Firestone Mills, Inc.	—	—	—	—	—	do
		do	Guy Robbins	80+	6	—	44	do
189	Do	Parkdale Mills, Inc.	—	115	6	—	18	do
		do	—	92	6	—	15	do
192	Do	Ralph Robbins	—	180	5	—	10	do
194	Do	do	—	210	5	100	35	do
196	Do	Bloom Mills, Inc.	—	98	6	—	8	do
197	Do	—	—	—	—	—	—	do
198	Do	—	—	—	—	—	—	do

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di-ameter (inches)	Depth of casing (feet) below surface	Yield (gallons a minute)	Aquifer and Remarks
Gaston County (continued)								
199	Gastonia	Textiles, Inc. Arlington Plant	----	160	6	----	18	Granite.
200	Gastonia, 2 miles W of	Threads, Inc.	Ralph Robbins J. S. Hinson do	105 490 1000?	8 8 8	44 80 ----	10 15 --	do do do
203	Do	do	do	----	----	----	----	do
204	Do	do	do	----	----	----	----	do
205	Do	Textiles, Inc. Myrtle Plant	----	160	6	----	10	Schist.
215	Bessemer City	Ragon Spinning Co.	Ralph Robbins do	168 238½	6 6	106 76¾	50 32½	do
216	2 miles W. of Bessemer City	do	do	130	5 5/8	110	27	do
217	1 3/4 miles E of Bessemer City	Ideal Machine Shop Algodon Mfg. Co. Osage Mfg. Co.	do do do	143 150	5 5/8 6	104 50	14 --	do do
218	Bessemer City	Gastonia Airport	U. S. Army	102	6	78	15	do
219	Bessemer City	do	do	----	----	----	----	do
240	Gastonia, 5 miles SE of	do	do	----	----	----	----	do
11	East Monbo	Superior Yarn Co.	Virginia Well Co.	505 400	8-6 8-6	45 54	---	3
12	Do	do	do	415	10-8	155	15	6
13	Do	do	R. E. Faw & Sons	----	----	15	23	
Iredell County								
45	Lincolnton, 2 miles SW of	Rudisill Spinning Co.	R. E. Faw	200	8	66	39	Granite; draw-
52	Do	Rhodes-Rhyne Mfg. Co.	do	350 250	6 6	----	----	down 85 feet.
53	Do	Glenn Mfg. Co.	do	160	6	----	----	20-25
54	Do	do	do	150+	4	----	----	20-25
55	Do	do	do	816	8-6	46	15	15
55a	Lincolnton, ½ mile NW of	Crown Converting Co.	do	131	6	----	10	10
59	do	do	do	----	----	----	21	21
							65	
							10-15	10-15
							do	Schist.

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Diameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Lincolnton									
60	Lincolnton	Coble Dairy Products, Inc.	—	90 184 142 175	8 6 6	— — —	— 10.9 5 8	30	Granite.
61	Do	Town	—	—	—	—	—	—	do,
64	Do	do	—	—	—	—	—	—	Combined
66	Do	do	—	—	—	—	—	—	yield of 6 wells
									is about 200 gallons a minute,
									pumping continuously.
									Granite.
67	Do	Ideal Chair Co.	—	200 700	4 6	— —	— —	6 4	Granite.
68	Do	do	R. E. Faw	—	—	—	—	do	do
72	Do	Cochrane Furniture Co.	Hickory Well Co.	302	6	39	18	100	do
		Boger Crawford Spinning Co.	do	400 166 240	8 6 8	118 100 90	53 40 42	32 30 10	do
74	Lincolnton, 2 miles E of	do	W. A. Kirkley Ralph Robbins	—	—	—	—	—	Schist.
75	Do	do	R. E. Faw	300 82	6 6	43½ 46	— 50	20 100	do, drawdown
77	Do	do	do	—	—	—	—	—	75 feet.
82	Lincolnton, 2½ miles S of	D. E. Rhyme Mills Laboratory Plant	do	93	6	53½	50	89	do, drawdown
82a	Do	do	do	—	—	—	—	—	90 feet.
82b	Do	do	do	—	—	—	—	—	Schist.
83	Lincolnton, 2½ miles S of	D. E. Rhyme Mills Lincoln Plant	do	180	6	—	—	—	do
88	Long Shoals	Long Shoals Cotton Mills, Inc.	Hickory Well Co. Ralph Robbins Hickory Well Co.	610 129½ 300	8-6 5½/8 6	65 73 —	— — —	17 40 30	do
89	Do	do	do	—	—	—	—	—	do
89b	Do	do	do	—	—	—	—	—	do
McDowell County									
1	Marion	Marion Mfg. Co.	—	158	6	45	—	100	Schist and gneiss.
2	Do	Marshall Lumber Co.	Hickory Well Co.	128	6	85	35	15	do
3	Do	Broghill Furniture Co.	Virginia Well Co.	225	8	37	6	80	do

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
McDowell County (continued)									
4	Marion	Clinchfield Mfg. Co.	Hickory Well Co.	122	6	58	20	8	Schist and gneiss.
5	Do	do	do	86	6	45	12	30	do
6	Do	do	do	128	6	86	30	40	do
7	Do	do	do	200	6	58	73	4	do
8	Nebo	South Mountain Institute	R. E. Faw & Sons	131	6	125	39	10 "	
Mecklenburg County									
5	Davidson	Davidson Cotton Mills, Inc.	-----	80	2	—	—	—	Granite.
7	Do	Davidson Ice & Fuel Co.	Jim Robbins	100	4	35	—	11	do
10	Cornelius	Cornelius Mills, Inc.	W. A. Kirkley	106	4	—	—	70	Schist.
11	Do	do	do	55	4	—	—	50	do
13	Do	Gem Yarn Mills Corp.	160	2	—	—	3	3/4	do
76	Charlotte, 2½ miles NE of	Interstate Granite Corp.	W. A. Kirkley	165	4	—	—	35	
77	Charlotte, 3½ miles NW of	do	do	200	4	—	—	35	
88	Charlotte, 4¼ miles NW of	Chadwick-Hoskins Co.	Syndor Well Co.	549	10	—	—	10	Granite.
91	Do	National Carbon Co.	W. A. Kirkley	150	4	100	—	18	do
92	Do	do	do	135	4	102	—	8	do
93	Do	do	do	108	4	84	—	7	do
94	Paw Creek, 1¼ miles NE of	Leaksville Woollen Mill Co.	Syndor Well Co.	350	10	—	—	36	
95	Do	do	do	300	10	—	—	60	
96	Do	do	do	1166½	10	—	—	68	
97	Do	do	do	1074	10	—	—	67	
101	Paw Creek	High School	Carolina Drilling Co.	140	6	—	—	30	
102	Do	Standard Oil Co.	J. S. Hinson	306	6	—	—	55	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di-ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Mecklenburg County (continued)									
103	Paw Creek	Shell Oil Co.	Heater Well Co.	148	6	80½	21	36	
105	Do	Kendall Mills	Sydnor Well Co.	600	10-8	60	32	55	
112	Paw Creek, 4 miles NW of Charlotte, 2 miles NW of Do	Southern Dyestuff Corp.	do	221	6	60	—	38	Granite.
125		American Cyanide Co.	Ralph Robbins	149	6	—	—	28	Diorite.
127		Southern Engineering Co.	do	42½ 225	5 4	40 60	4 20	25 22	Granite.
130	Charlotte Do	Scholtz Greenhouse Charlotte Pipe & Foundry Co.	W. A. Kirkley	196	6	—	20	10-15	
132		Air Reduction Sales Co.	J. S. Hinson	200	6	85	—	50	
133	Do	National Welding Supply Co.	W. A. Kirkley	150	3	—	—	18	Granite.
134	Do	Highland Park Mfg. Co., Plant No. 3	Ralph Robbins	75	6	—	—	14	do
136	Do	do	do	87	6	—	—	9	do
137	Do	Hudson Hosiery Co.	W. A. Kirkley	95	4	85	18	15	do
145	Charlotte, 4½ miles SE of Mathews Pineville, 3 3/4 miles NW of Do	Town	Ben Aycock	275	6	110	—	20	Greenstone.
182a		U. S. Rubber Co.	W. A. Kirkley	196	3	—	12	40	Gabbro.
220		Shell loading plant	do	145	3	—	12	30	do
221	Pineville	Town	R. E. Faw	134	8	—	12	75	Diorite.
235									
4	Sunnyview Kross Keys, 1 mile E of Lynn, 1¼ miles NE of Do	Sunnyview School	—	150	6	—	50	10-15	Granite.
8		Green Creek School	—	200	6	—	—	3-5	do
12		Spartanburg Tuber-culosis Assoc.	—	250	6	—	—	9	
13		do	98	6	—	—	—	6	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di-diameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Polk County (continued)									
16	Tryon, 3/4 mile N of	Southern Mercerizing Co.	-----	38	2	35	---	* 45	Gravel and sand (?) *Combined yield of 3 wells is 45 gallons a minute.
7	Gilkey	School	Hickory Well Co.	758	6	—	—	1-2	Gneiss.
8	Do	do	do	135	6	—	—	15	do
9	Union Mills	Alexander Mills	do	700	8	100	64	18	
23	Rutherfordton	Grace Cotton Mills Co.	A. B. Taylor	395	6	—	—	7½	Gneiss.
24	Spindale	Elmore Corp.	Sydnor Well Co.	650	8-6	—	—	250	Group of eight wells.
28	Alexander Mills	Alexander Mills, Inc.	—	—	—	—	—	45	do
29	Do	do	do	60	2	—	—	45	
30	Do	do	do	60	2	—	—	60	
34	Ellenboro, 1 mile NW of	Neisler Mills, Corp.	do	340	8	—	—	5	Schist.
35	Do	A. B. Taylor	do	90	5 5/8	—	—	18	do
36	Do	do	do	59	5 5/8	—	—	50	do
37	Do	do	do	174	5 5/8	65	8	7	do
38	Do	do	do	45	5 5/8	40	7	30+	do
39	Do	do	do	48	5 5/8	15	7	50	do
49	Caroleen	Caroleen Mills Co.	do	77	5 5/8	15	—	8	do
50	Do	do	do	250	6	—	—	15	
51a	Do	do	do	250	6	—	—	20	
52	Avondale	Hickory Well Co.	do	342	6	28	40	27	
56	Henrietta	Cliffsides Mills	do	—	—	—	—	10	Flows small amount; not used.
57	Do	Haynes Plant	Virginia Well Co.	1301	6	—	—	7	
58a	Do	Henrietta Mill Co.	A. B. Taylor	800	8-6	—	—	25	
58b	Do	do	Hickory Well Co.	125	5 5/8	—	—	25	
		do	do	148	6	31	—	10	
		do	do	106	6	20	18	20	

Records of wells in the Catawba and Broad River Basins (Continued)

Well No.	Location	Owner	Driller	Depth (feet)	Di- ameter (inches)	Depth of casing (feet)	Water level (feet below surface)	Yield (gallons a minute)	Aquifer and Remarks
Rutherford County (continued)									
64	Cliffside	Cliffside Mills	Virginia Well Co.	800?	10-6?	—	—	—	"Sulfur Well"; not used.
65	Do	do	do	300?	10	—	—	flows	35
71	Cliffside, 1½ miles S of	Duke Power Co.	A. B. Taylor R. E. Faw & Sons	47 297½	6 5	40 61½	— 42	12 24	
72	Do	do	A. B. Taylor	178	5 5/8	20?	15	5	
73	Harris	Harris Gin & Ice Co.	do	130	5 5/8	20	15	20	
74	Do	do	Lake Lure	240	—	—	—	20	
75	Lake Lure	—	Union County	—	—	—	—	—	
1	Waxhaw	Town	Virginia Well Co.	253	8	112	33	60	Slate.
2	Do	do	J. S. Hinson	—	—	—	—	—	
129									

